AUGUSTA FACILITIES ASSESSMENT

Lillian P. Hussey Elementary
Sylvio Gilbert Elementary School
Lincoln Elementary School
Farrington Elementary School
Cony Middle School

Augusta, ME

CHA Project Number: 089487

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TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Overview and Background 1
1.1.1 Enrollment 1
1.1.2 Elementary School Building Conditions 2
1.1.2.1 Hussey Building Condition 2
1.1.3 Capacity and Utilization 3
1.1.4 Building Energy Consumption 4

2.0 BUILDING CONDITIONS 1
2.1 Lillian P. Hussey Elementary School – Architectural Observations 1
2.1.1 Lillian P. Hussey Elementary School – Structural Observations and Recommendations 9
2.1.2 Hussey Elementary School – Mechanical, Plumbing, Electrical Observations and Recommendations 17
2.2 Sylvio Gilbert Elementary School – Architectural Observations 32
2.2.1 Sylvio Gilbert Elementary School – Structural Observations and Recommendations 39
2.2.2 Sylvio Gilbert Elementary School – Mechanical, Plumbing and Electrical Observations and Recommendations 47
2.3 Lincoln Elementary School – Architectural Observations 62
2.3.1 Lincoln Elementary School – Structural Observations and Recommendations 68
2.3.2 Lincoln Elementary School – Mechanical, Plumbing and Electrical Observations and Recommendations 74
2.4 Farrington Elementary School – Architectural Observations 90
2.4.1 Farrington Elementary School – Structural Observations and Recommendations 100
2.4.2 Farrington Elementary School – Mechanical, Plumbing and Electrical Observations and Recommendations 106
2.5 Cony Middle and High School 122

3.0 SITE ANALYSIS 125

4.0 EDUCATIONAL DELIVERY AND ADEQUACY 178
4.1 Special Education 178
4.2 Pre-K 178
4.3 English Speakers of Other Languages (ESOL) 178
4.4 Hussey Educational Environment 178
4.4.1.1 Hussey - Notable features of educational delivery 178
4.4.1.2 Hussey – Learning Environment Quality 179
4.4.1.3 Hussey – Educational Flexibility 179
4.5 Gilbert Educational Environment 179
4.5.1.1 Gilbert - Notable features of educational delivery 179
4.5.1.2 Gilbert – Learning Environment Quality 179
4.5.1.3 Gilbert Educational Flexibility 179
4.6 Lincoln Elementary School 179
4.6.1.1 Lincoln - Notable features of educational delivery 179
4.6.1.2 Lincoln – Learning Environment Quality 179
4.6.1.3 Lincoln – Educational Flexibility 180
4.7 Farrington Elementary School 180
4.7.1.1 Farrington – Notable features of educational delivery 180
4.7.1.2 Farrington – Learning Environment Quality 180
4.7.1.3 Farrington – Educational Flexibility 180

5.0 CONCLUSIONS AND RECOMMENDATIONS 178

LIST OF APPENDIXES.....180
Appendix A Enrollment Data
Appendix B Building Plans
Appendix C Building SF Spreadsheet: Existing v. DOE
Appendix D District Goals

1.0 INTRODUCTION

1.1 Overview and Background

CHA Architecture, P.C. was retained in Fall of 2024 to provide the Augusta School District and the Department of Education with an updated and expanded facility study to complement information from the 2017 application for Capital Construction funding for Hussey School. The study included an in depth look at Hussey Elementary, Gilbert Elementary, Lincoln Elementary and Farrington Elementary and a high-level analysis of current usage and capacity of the middle school at the Cony complex. The elementary schools were evaluated using five major categories, to varying degree.

- Condition of the Building
- Building Capacity
- Learning Environment Quality
- Educational Flexibility
- Energy Efficiency

Geographically, the City of Augusta is divided by the Kennebec River. The District operates four elementary schools for Pre-K - Grade 6 and a combined Middle/High school for Grades 7-12 at the Cony site. Two of the elementary schools - Lincoln and Gilbert, are on the west side of the river and two of the elementary schools - Hussey and Farrington, are on the east side of the river along with the Capital Area Technical Center (CATC) which is on the middle/high school campus.

Table 1.1

	Location	Original Construction	Significant Renovation	Age From Original Construction (YRS)
Hussey Elementary	East	1954	1968	71
Gilbert Elementary	West	1971	-	54
Lincoln Elementary	West	1988	-	37
Farrington Elementary	East	1988	-	37
Cony Middle/High School	East	2006	-	19

1.1.1 Enrollment

A review of the ten-year historic and projected enrollment data, with the 2023-2024 year as the basis, found the following. It should be noted that these statistics are based on an analysis of live births; while the historical enrollment data includes the existing New Mainer population, the projected numbers do not. While not anticipated to be significant, this population often arrives in the community in groups, with little warning, and includes school age children.

- As of October 2024 there were 2,160 students in the Augusta School District.
- Overall enrollment has declined 3.8% over the past ten years.
- Overall enrollment is expected to continue to decline annually and drop by 12% by the 2033-2034 school year. This is net decrease averaging 16 students per year. (The New England School

Development Council anticipates a New England 5.5% decrease in PK-12 students by 2033; that decrease is expected to be 6.3% in Maine.)

- Over the next three years, Grades K-6 enrollment is expected to decrease by 82 students. Grades 7-8 enrollment is expected to decrease by 12 students, and Grades 9-12 are expected to increase by 25 students.
- As of October 2024, there were 420 students in Special Education, or around 20% of the population. This number and percentage is increasing slowly each year.
- NESDEC enrollment projections are based on birth and death records only. It is important to note that the City of Augusta just approved three major housing development projects. Additionally, there has been an increase of New Mainer Population year-over-year into the District. The Augusta School District is anticipating a flat enrollment projection, given these additional factors.

1.1.2 Elementary School Building Conditions

The buildings have been well maintained with a regular program of maintenance. Interiors finishes are in good condition but showing signs of age-appropriate wear and tear. Farrington and Lincoln were re-roofed during the 2019-2020 year and Gilbert was re-roofed in 2023. All the buildings have mechanical ventilation and air conditioning for most or all of the building. The MDP at Hussey is more than 200% past its usable life span. MDPs at Farrington and Lincoln are past their published lifespans but continue to function well. The Gilbert MDP was replaced less than ten years ago. All of the school buildings are on public sewer and water; Hussey and Gilbert are not sprinklered.

Of the four elementary schools in the district, Hussey is the oldest, and due to age and construction (mixture of steel framed and wood framed construction), the most challenging to renovate and meet current Code requirements. The three other schools – Gilbert, Farrington, and Lincoln, are mainly steel framed buildings (Lincoln & Gilbert also have sections of steel framed on load bearing CMU walls) with CMU and brick veneer exterior walls and interior CMU at corridors, vertical circulation, and other high impact spaces.

While the CMU appears to be in generally good condition and function to serve to resist lateral loads, it is not known whether there is reinforcing in load bearing and non-loadbearing CMU walls, nor is it known if the CMU walls could meet current Code requirements. At Gilbert, the oldest of the steel frame and CMU buildings, the exterior wall assembly only has 4” CMU backup which cannot contain reinforcing and would be challenging to meet current Code requirements and/or renovated to current Code requirements.

1.1.2.1 Hussey Building Condition

<u>Hussey School Since Capital Improvement Application</u>

CHA and the design team has reviewed the Hussey Elementary School and found that the deficiencies outlined in the 2017-2018 Major Capital Improvements Application remain. These include:

- Wood framed structure which does not meet current energy codes, life safety codes and building codes.
- No sprinkler system in the building.
- Generally poor ventilation throughout the building
- There is no dedicated music or art room.
- A shared gymnasium/cafeteria which is undersized for both purposes.
- Limited space to deliver special education, OT/PT, ESL or GT

- A tight site which results in congestion between cars, buses and pedestrians
- A full basement/crawl space below the original building without any fire separation from the main story
- A severely undersized kitchen

1.1.3 Capacity and Utilization

The Augusta School Department has undertaken consolidation efforts in recent years, closing their middle schools and adding 7th and 8th grades to the Cony complex. 6th grade was distributed to the four remaining elementary schools. Some special education offerings were also consolidated, with Farrington covering special education needs for the east side of the city. Elementary age ESOL students have been consolidated at Farrington ; however, the school board has recently decided to redistribute the ESOL students to their in-zone schools in order to give them the best elementary experience. Augusta has continually maximized their school assets, and as such, have very high utilization of all their school buildings. Elementary school utilization ranges from 84% at Hussey to 92% and 93% at Lincoln and Farrington, respectively.

SCHOOL	CAPACITY *	ENROLLMENT	GROSS S.F.	SF/STUDENT	CLASSROOM UTILIZATION
HUSSEY	286	240	28,900	120	84%
GILBERT	386	343	52,633	153	89%
LINCOLN	307	282	38,000	135	92%
FARRINGTON	321	300	48,050	160	93%
CONY MS	389	327	n/a	n/a	84%

** Capacity is calculated based on DOE guidelines of 55 or 35 s.f. per student and adjusted to Augusta School Department Board maximum classroom size guidelines.*

Hussey's relative low square footage per student allocation can be attributed to a significant lack of specials classrooms and special education spaces. Other typical support space such as administrative and nurse spaces are undersized by 50%.

Gilbert has a number of oversized classrooms, all of which are over 800 s.f. inclusive of storage. Total classroom square footage is about 20% higher than if the same number of classrooms were designed to DOE guidelines. This is somewhat offset by lack of a separate cafeteria and art classroom, undersized nurse space and undersized administration spaces, but ultimately results in a higher square footage per student ratio.

Lincoln has a very efficient footprint with a range of classroom sizes that align with current DOE guidelines. However, the school also lacks a dedicated art classroom and the library is undersized by about 50%. Lincoln is able to offer special education classrooms, intervention rooms, and OT/PT. Administrative and nurse spaces are undersized significantly.

Farrington has a very high square foot per student ratio; however, the classrooms are highly utilized. This can be partially attributed to the courtyard design with single-loaded corridors. There is also

miscellaneous circulation space around the cafeteria and gymnasium. Additionally the cafeteria is oversized by approximately 30%. Generally, classroom sizes align with current DOE guidelines, and a Farrington has a number of special education classrooms to accommodate the Farrington and Hussey catchment. Farrington has appropriately sized art and music classrooms, elementary gym and library.

Seventh and eighth graders from across the City were moved into the Cony HS building when the City's middle schools were closed. This was a prudent decision by the Augusta School Department to jettison aging buildings from the building maintenance roster and maximize usage of their newest building. The 7th and 8th Grade classrooms are largely located on the second floor of the efficient double-loaded classroom wing. There are 17 classrooms dedicated to the 7th and 8th Grade plus 7 classrooms that are shared with HS programming. All 24 of these classrooms are utilized at 84%, which exceeds the utilization goals recommended by the DOE. 7th and 8th grade specials programming utilizes shared gym, library, music, and art spaces with the HS, and Functional Life Skills for these grades is integrated into 7-12 programs.

1.1.4 Building Energy Consumption

The following information was provided by the Augusta School District. Heating and Electrical costs average close to $1.00/sf. The additional operational costs bring total costs of running the buildings to high numbers.

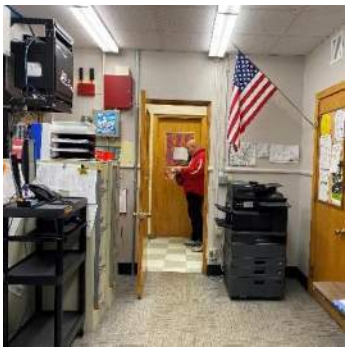
Augusta School Department - School Operational Costs									
Name	Building Size (Gross SF)	Heating System Fuel Type(s)	Age of Primary Boiler (Years)	Most Recent Year's Annual Heating Cost	Heating Cost per sf	Electrical Cost per sf	**Total (Heating + Electrical)**	Operational Cost per sf	**Total (Heating + Electrical + Operational)**
HUSSEY	28,900	NATURAL GAS	15	$ 17,856.59	$ 0.62	$ 0.96	**$ 1.58**	$ 5.12	**$ 6.70**
GILBERT	52,633	NATURAL GAS	11	$ 20,501.69	$ 0.39	$ 0.66	**$ 1.05**	$ 3.02	**$ 4.07**
LINCOLN	38,000	NATURAL GAS	11	$ 11,556.27	$ 0.30	$ 0.80	**$ 1.11**	$ 5.02	**$ 6.13**
FARRINGTON	48,050	NATURAL GAS	11	$ 15,566.06	$ 0.32	$ 0.63	**$ 0.95**	$ 4.07	**$ 5.02**

2.0 BUILDING CONDITIONS

2.1 Lillian P. Hussey Elementary School – Architectural Observations

Hussey Elementary School was built in 1954 with a hexagonal addition built in 1974. It is the oldest elementary school in the city. The school sits on a 10-acre site in the middle of a residential neighborhood on the east side of the river. Hussey is Augusta's only single-story elementary school: it is also the smallest of the four elementary schools.

The 1974 addition is predominantly wood frame construction with wood roof and wood walls with sheetrock. A large basement under the original building is used as a storage area and boiler room. These areas are not properly ventilated or separated for fire protection purposes or safe egress.

Entry Vestibule The entry vestibule has wood doors which have been retrofitted with electrified hardware. An intercom in the vestibule allows visitors to contact the interior administrative office. Once buzzed through into the school, visitors can interact with the admin suite through an interior window and shelf. There is no ADA level intercom window.	 
Administration The administrative suite includes an open administrative area with seating for two staff people and waiting area, a storage closet and the principal's office which serves as a conference room and as a calming space for students.	  

Typical Classrooms

Classrooms in the original building range from 775 sf to just over 900 sf. One 4th grade classroom is closer to 650 sf. These classrooms are grouped to share an interior zone containing one small toilet room per classroom and a shared exterior door.

Also along the shared zone are storage niches for each room. Sinks are all inside the classrooms and are not ADA compliant. Classroom doors are not inset and open directly into the corridors.

Exterior walls have ribbon windows with glass block above; the glass block is covered inside the rooms due to their poor quality and heat loss potential.

Classrooms in the hexagonal addition are roughly triangular and vary in size from 725 sf to 937 sf. Each has an interior toilet room with a sink in the classroom. Teacher opinions of the oddly shaped rooms vary. Many find it hard to set up a traditional classroom within the shape. There is little or no built in storage in these rooms.

There is no dedicated art room; art is held in each classroom and teachers report this being messy. Hussey shares an art teacher with Farrington.

There are steam unit ventilators in each classroom, as well as heat pump units which deliver air conditioning.

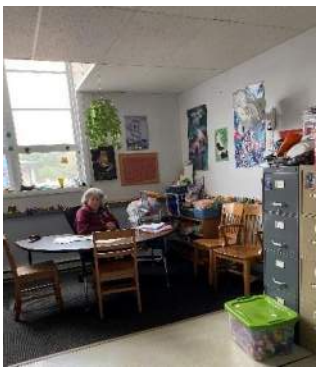






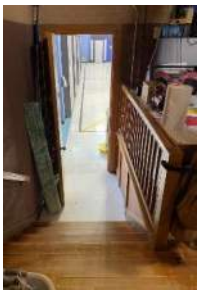




Special Education Classroom This classroom houses one primary teacher and up to three ed techs at any one time.	
Speech The speech therapist has an office at the end of the kitchen/cafeteria corridor. The office experiences temperature extremes.	
Social Work There is a small social work office towards the end of the kitchen/cafeteria corridor. The social worker appreciates having carpet in her office.	
Music / Stage There is no dedicated music room. The music teacher is shared with Farrington. Music and band are taught on the stage. The music/band and gym teachers all have desks on the stage. The stage is accessible by stairs from the gym or a corridor.	







Library

The original library was broken up during a renovation to create an additional classroom with part of the space. The library is now the same size as the smaller classrooms in the building. There is a small niche behind the librarian's desk for AV equipment and storage.





Gymnasium

The gymnasium serves as a cafeteria, a music classroom and provides space for occasional other programming. There are niches in the wall to store fold down lunch tables with attached bench seating. The school runs two lunches in the space and all staff have to help take tables down and put them back up. There is no dedicated gym storage.







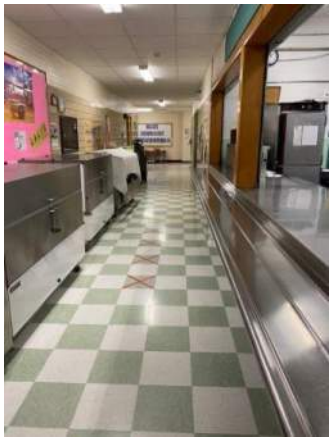


Kitchen and Servery

The kitchen employs three full time staff. Tables and equipment are fixed making it hard to rearrange the space. A former dry storage space now serves as dry storage and as an office; the cooler is accessed through this space. The walk-in freezer is exterior to the building and can be accessed only by walking out of the building.

Students are served at a counter between the kitchen and corridor where they also get drinks and other items from large coolers on wheels.

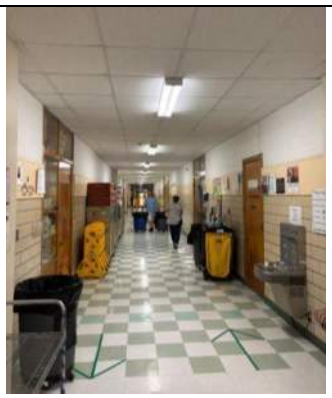
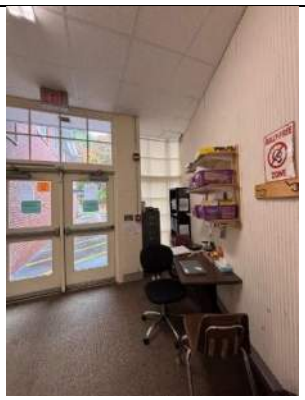




Nurse The nurse has a small, dedicated suite with a small (non-ADA) bathroom and a niche with the nurse's desk and one bed; a second bed is in the open entry/waiting area. There is very little privacy for students resting or waiting for a parent.	  
Dean There is a dedicated Dean's office next to the entry vestibule and opposite the main hallway outside the gymnasium.	
Teacher Space There is a dedicated teacher room with a kitchenette, a small bathroom, a copier station and an entry hallway that doubles as the teacher mailroom.	
Corridors Corridors in the original building have CMU/brick walls with classroom doors opening directly into them, i.e no niches for	

gathering or to contain doors swinging into the corridors. There are no lockers and the space is frequently used for storage.

The corridor to the addition is a ramp. The corridors in the addition are metal framed gypsum board walls. In both wings, edges of corridors are used as pull-out space for one-on-one work.




Basement Storage

There is a combination basement and crawl space below the original 1954 building. The basement is accessed either by an exterior door and stairs near the kitchen or by an interior door and stairs near the front entry. There is a large boiler room and a second large storage room for school supplies. The basement is not fire separated from the rest of the building.




Exterior

The exterior of Hussey is primarily brick, wood, and glass block. The brick is generally in good condition. The original design placed glass block above ribbons of windows with a wood infill structure. Many of the glass blocks have been damaged and in some locations are covered by a substrate with a stucco finish.

Old wood windows are in various states of disrepair. There is evidence of windows not operating, broken and damaged screens and cracked and splitting wood.

The hexagonal addition is primarily brick with more vertically oriented windows with wood paneling above them. A thick shingled fascia follows the hexagonal shape.

Exterior doors are combination of wood and hollow metal. The hollow metal doors are in better shape. All doors are set in recessed areas under a roof, helping them stay dry and improving longevity.









Site Hussey is located on a 10-acre site on the east side of the river. Most of the site is hilly and suspected to be bedrock. A playground is located close to the backside of the original building and this area backs up to a large, wooded area which is hard to fully contain with fencing. The site and building location restrict the possibility for separation between the bus drop off loop or parking lot expansion. Parents must drive through the parking lot loop for both drop off and pick up.	

2.1.1 Lillian P. Hussey Elementary School – Structural Observations and Recommendations

The 1953 +/- original portion of Hussey School is now over 70 years old. The 1968 +/- addition is now over 55 years old. School structure where visible appears to still be in decent condition, free from any significant signs of framing degradation, distress, or overload. The roof structure has been reinforced to meet current building code roof snow loads, including snow drift load provisions introduced in the mid-1970's. There is no expectation that the school meets modern building code requirements for lateral loads from extreme earthquake and wind events.

Hussey School roofing is in decent condition. The flat roof areas show patching and seam repair from work done in 2018. On-going maintenance should be done for roofing materials. Not enough is known about existing roof insulation levels to know if roof meets current 2018 BGS requirement of R-30 insulation levels.

General Applicable Building Code – 2015 American Society Of Civil Engineering Minimum Design Loads For Buildings And Other Structures – 2010 The original portion of Hussey School was constructed in 1953 +/-. Architectural and structural design was by Bunker & Savage Architects from Augusta, Maine. Bunker & Savage Architects also provided architectural and structural design services for an addition to the original Hussey School constructed in 1968 +/-. The 1968 +/-	

addition included a flat roof connector to a hexagon shaped roof area over six new classroom spaces. Architectural and structural drawings for both the original building and the addition were made available for this study. Observations here are based on those drawing materials, and observations made/discussions during site visit to the school in September 2024. Observations were limited to items that were visible during the site visit. No destructive testing was performed to expose hidden structural items.

Roofing

Based on data supplied from G & E Roofing the hexagon portion of the 1968 +/- addition to Hussey School has a BP Esguard/Black Velvet roofing surface. The connector portion of the 1968 +/- addition has adhered 0.60" EPDM roofing over an unknown amount of insulation. The bulk of the original 1953 +/- building surface has adhered 0.60" EPDM roofing with 3" insulation and ½" coverboard. There are various areas on the existing roof surfaces where raised roofs were added to reinforce the original roof structure. These areas also have adhered 0.60" EPDM roofing over an unknown amount of insulation.

It appears based on the G & E Roofing data that any original roofing surface (most likely tar and gravel) was removed at some point, likely during re-roofing activities when the EPDM roofing was added. The replacement of any original tar and gravel roofing surface has added perhaps 6 pounds per square foot (psf) of snow load carrying capacity to the original roof framing components.

It was reported that the most recent roofing work on the Hussey School was in 2018. At that time a coating surface was applied to the entire hexagon roof, a restorative coating was applied to all EPDM roofing seams and portions of the existing EPDM roofing were patched. The EPDM roofing is in decent condition.

Google Maps



Key Plan Roof



The current 2018 Bureau of General Services (BGS) reroofing and structure upgrade guidelines currently require that all roofs be evaluated for IBC 2015 design loading requirements, and the application of an R-30 minimum roof insulation. This is what has been used for this study to review existing framing components. The amount of insulation at many of the existing roof areas is unknown so it is not known how much, if any, of the existing roof meets the current requirement of an R-30 insulation level.

By the time any design work is done on this building it is possible that the state of Maine will have adopted the IBC 2021 building code. Observations made here concerning roof load capacity and required roofing insulation levels should be reviewed for whatever buildings code is in force at time any modifications are made here.

Exterior Elevation



Structure

Hussey School consists of the original 1953 +/- building area (1953) and the 1968 +/- addition (1968). 1953 has multiple flat roof areas including a high roof over gymnasium space. 1968 has a flat roof connector between original 1953 and 1968 hexagon roof spaces. A portion of 1953 has a full height basement area.

Roofing Hexagon Roof



Foundations/Slabs:

Foundations/slabs consist of perimeter frost walls and basement walls with some interior concrete column footings. No concerns were identified in the slabs-on-grade or with the exposed elements of the building foundation system. Any minor foundation cracks observed should be watched and should be sealed to prevent water intrusion and/or freeze thaw damage.

First-Floor Framing:

1953 has an area of first-floor framing over a full height basement level. The first-floor framing consists of a 4" +/- concrete slab on wire-reinforced paper form materials supported by open-web steel joists spaced about 24" apart that bear on interior steel beam/column lines, or perimeter foundation walls. The existing floor framing appears to be as shown on the existing structural drawings. The floor framing was observed at a number of locations and no signs of damage, distress or overload were observed in the floor framing.

Roof Framing:

General:

Hussey School has a series of flat roof areas, and one hexagon sloped roof area. The 1953 has several flat roof levels. The flat connector roof level at 1968 is down below the 1968 hexagon roof level. Current building codes require that roof framing on the low roof side of any high to low roof steps be designed for increased snow loads from blowing snow that may drift in at these roof steps and collect in greater depths/load levels than at areas of the roof away from the roof steps. Drifting roof snow load provisions were introduced in building codes in the mid-1970's, after the construction of both the 1953 and 1968 sections of Hussey School. The low roof areas at all high to low roof steps need to be capable of supporting the code required snow drift loads to meet the current code provisions.

1953:

The roof for 1953 at Hussey School Wing is wood-framed with some steel beams at openings along interior bearing walls. The classrooms have 2X14 Douglas-Fir rafters at 16" on center. Corridors have 2X8 rafters at 16" on center. Gymnasium has 9" X 21-1/8" glu-lam beams at 8' on center with series of 4X6 purlins spaced 4' apart running between the glu-lam beams. Roof decking is 1"

Roofing





Raised Roof Reinforcing



boards. Perimeter bearing walls have double 2X14 Douglas-Fir beams along roof edges running atop a series of 5" deep steel columns located in mullion spaces between ganged window openings, and 12" masonry walls with 4" brick/8" CMU away from the ganged windows. Most of 1953 has hard ceilings suspended about 12" below the wood roof framing so only limited observations of the existing wood roof framing were possible during the site visit.



1968:

The hexagon roof for 1969 consists of series of 2X10 wood rafters infilled between a series of steel beams that run from points along the building perimeter up slope to the top/center of the roof. Low ends of the steel beams are supported by steel columns bearing atop the perimeter foundation walls. Roof sheathing is 5/8" plywood. The connector to 1953 has 2X12 wood roof rafters at 16" on center supported by interior and perimeter 2X wood stud bearing walls.



The existing roof framing for 1968 appears to be as shown on the existing structural drawings. The roof framing was observed at several locations and no signs of damage, distress or overload were observed in the roof framing.

CODE REVIEW

First-Floor Framing:

The existing structural drawings do not show any design load levels for the existing first-floor framing. As part of this study some floor joists were reviewed to confirm load carrying capacity. Based on that review it appears that the existing first-floor framing does meet current code floor load requirements.



Roof Framing:

General:

The existing structural drawings do not show any design load levels for any of the existing roof framing.

Flat Roofs:

A report from 2010 by Lincoln/Haney Engineering Associates on the capacity of all the flat roofs at Hussey School was supplied for this study. That work concluded that the original roof framing, except at low roof areas subjected to snow drift loads, was capable of meeting code snow load requirements from the 2009 International Building Code (IBC). The 2009 IBC was the adopted building code at the time of the 2010 study work. The current 2015 IBC code has the same snow load requirements as the 2009 IBC code. The 2010 Lincoln/Haney report assumed that any original roofing surfaces (likely tar and gravel) had been removed, most likely when current EPDM roofing was added. The data supplied by G & E Roofing has confirmed that the original roofing surfaces were removed. The 2010 Lincoln/Haney report used the reduction in roofing dead load from the removal of the original roofing surface to bump available roof framing load capacities to carry snow loads up enough to meet the building code requirements in the non-snow drift areas. The 2010 Lincoln/Haney report also contained recommendations on approaches to reinforce the low roof areas to meet code required snow drift loads.

We were provided structural drawings from 2016 generated by Lincoln/Haney Engineering for the reinforcement of the low roof areas subjected to snow drift loads. All of the roof reinforcing was done by adding new roof framing capable of supporting the drift loads from above the existing roof surface. This is because the existing ceiling conditions within the building space did not allow for any access from inside the building to add any new framing. These raised roof areas of reinforcement are very evident at the roof steps.





Hexagon Roof Framing

Based on the data available from the 2010 Lincoln/Haney report on the existing original roof framing capacity, the 2016 Lincoln/Haney drawings for roof reinforcing at the snow drift areas and spot check calculations for some of the existing roof framing components it appears that the existing roof framing at all flat roof areas for Hussey School meet current 2015 IBC requirements for snow loads, including those for snow drift loads at roof steps.



Hexagon Roof:

As part of this study, selected roof framing components for the hexagon roof were reviewed to determine if they met current code roof snow load requirements. Review included the 2X10 roof rafters, and some of steel framing support members. No data was gathered during the site visit on steel connection conditions as the framing connection conditions were not accessible. Review of steel framing was based on member sizes from available structural drawings supplied.

The 2X10 roof rafters are spaced 16" on center and span 12' +/- between steel support beams. The 2X10 rafters appear to meet current code snow load requirements. Some of steel beams appear to be perhaps 15% overstressed relative to current code snow load requirements. That level of overstress is not insignificant, but is not judged to be enough to cause significant load issues for the existing steel framing.

First Floor Framing



Lateral Loads:

Building codes contain load provisions for lateral loads on buildings/building components from wind and seismic events. These lateral load requirements have changed a great deal since the construction of the Hussey School. For instance, the current building code requires that the framing at Hussey School resist winds at speeds of 115 miles per hour. There is no expectation that the existing structure can offer sufficient

resistance to meet the current code lateral load levels.	  

	Flat Roof Wood Framing 

Hussey Structural Recommendations

Review degree/level of planned renovation and Code threshold for upgrade of existing building structural systems to present Code requirements. Due to age and construction type of the buildings, renovation may be challenging to meet current Code requirements.

Additions should be laterally (wind and seismic) independent of existing construction.

Final observations and recommendations should be reviewed for the actual buildings code in force at time any modifications are made.

2.1.2 Hussey Elementary School – Mechanical, Plumbing, Electrical Observations and Recommendations

Hussey Elementary School was constructed in 1954 with an addition in approximately 1970 and comprises approximately 25,900 square feet. Below is an assessment of the school's mechanical, plumbing, fire protection, and electrical systems in their current conditions.	
Mechanical/HVAC **<u>Boiler:</u>** The building is served by two natural gas fired cast iron sectional boilers. One of the boilers generates low pressure steam for building heat. The boiler is manufactured by Burnham, sized at 1,198 MBH, and was installed in approximately 2008. This boiler serves the original 1950 building. The low-pressure steam and condensate are distributed throughout the 1950's section of the facility at the basement and crawlspace area using	

stele piping with flanged and screwed fittings. Much of the condensate return piping is observed to be uninsulated. Steam piping is primarily insulated with fiberglass insulation with all service jacket.

The second boiler generates hot water for building heat, manufactured by Burnham, sized at 773 MBH, and serves the 1970's addition at the West end of the facility. Hot water is distributed to the building addition via two in line Taco constant volume hot water circulator pumps. Hot water piping is constructed of schedule 40 steel at most locations, insulated with fiberglass insulation with all service type jacket.

Combustion/ventilation air for the boiler room is provided by a fan powered combustion air system which incorporates a supply fan for each boiler ducted to a sidewall louver.

Boiler Recommendation: Although the published service life for cast iron sectional boilers is 20-25 years, placing the existing boilers within their dependable service lives, there are much more efficient options for heating available at present time. Additionally, steam heat is not as easy to regulate as hot water heat leading to difficulty in maintaining proper control of space temperatures in the colder season. It is recommended that consideration be given to boiler replacement with condensing hot water boilers similar to those in the other elementary schools in the district. Convert the steam sections of the facility to hot water and upgrade the heating system at the 1970's addition as required to utilize the lower temperature water generated by the proposed boilers.

Install new variable speed driven hot water pumps to serve the facility.

Classroom Ventilation: The classrooms at the central section of the 1950's original building and the Library within that wing utilize wall mounted unit ventilators to provide heat and ventilation to the classroom spaces. These units are original to the facility construction, incorporate steam coils and





pneumatic controls, and are well beyond their published service lives (20-30 years).

Classroom Ventilation Recommendation: Replace the unit ventilators with a central energy recovery ventilator to provide tempered ventilation throughout the classroom wing. The unit will incorporate a hot water heating coil for tempering the air and an enthalpy energy recovery module to transfer energy from the exhaust stream into the fresh air stream. The unit will provide exhaust for the bathroom and storage areas while bringing in ventilation air for the occupied spaces.



RTU: The fourth-grade classrooms at the east end of the 1950's building section utilize a cooling only Trane Precedent package rooftop unit to provide ventilation and cooling. Heating for these spaces appears to be via steam radiators at the perimeter. The age of the rooftop units is not clear but they appear to be in excess of 15 years old. It is reported that these units only operate when there is a call for mechanical cooling.



Similar to the fourth-grade classrooms, the east wing Art/Music Room utilizes a Trane Precedent RTU to provide cooling and ventilation, with steam radiation for the supplemental heat source.

RTU Recommendation: The rooftop units are approaching their published service lives (15-20 years). Additionally, based upon the fact that the units operate only during a call for mechanical cooling, they do not provide the spaces with a source of ventilation air that meets the requirements of ASHRAE 62.1-2015. Replace the package rooftop units with energy recovery ventilators to provide ventilation for the occupied spaces throughout during occupied times. The units will incorporate hot water heating with enthalpy energy recovery modules.

Classroom Addition: The classrooms in the 1970's addition utilize a recently installed energy recovery ventilator to provide ventilation to the occupied classroom areas. The unit is installed

below the ceiling with exposed ductwork routed to each of the occupied spaces. The unit appears to be well within its published service life (15-18 years). The units do not, however, include a heating coil, so the air is delivered untempered.



Classroom Addition Recommendation**:** Add a duct mounted hot water heating coil to temper the ventilation air during the colder days of occupancy.

Admin Area: The Administrative area, Teacher's Room, and Speech Room do not appear to contain a system of fresh air ventilation.

Admin Area Recommendation: Furnish and install an energy recovery ventilator (ERV) to provide code required fresh air ventilation throughout the occupied spaces. The ERV will incorporate a duct mounted heating coil to temper the fresh air during the heating season and an enthalpy energy recovery module to recover energy from the exhaust air stream.



Multi-Purpose Room: The Multi-Purpose Room incorporates an interior heating and ventilating unit to provide space heating and ventilation throughout. The unit has a steam coil and introduces fresh air through a sidewall louver. Relief air for the space is provided by sidewall exhaust fans located above the adjacent roof.

Multi-Purpose Room Recommendation: The H+V unit appears original to the facility and, although it has been recently upgraded to include modern controls with demand controlled ventilation, it is beyond its published service life (25-30 years). The unit should be replaced with a new unit that incorporates a hot water heating coil, mixing box for fresh air ventilation, economizer cooling, and demand controlled ventilation.

General Exhaust: There are roof mounted exhaust fans used for exhaust in bathrooms and storage rooms throughout the school. The fans are operational, but appear to be original to the facility and at the end of their published service lives (20-25 years).

General Exhaust Recommendations: The fans are at the end of their published service lives and should be considered for replacement. It is recommended that the exhaust be provided by energy recovery ventilators as described elsewhere herein.

Grease Hood: There is a compensating grease hood serving the kitchen cooking appliances, with grease baffles. The hood is equipped with an Ansul system, and appears to be in good working order. The associated exhaust fan and intake air duct assembly are on the roof above and also appear in good working order. The hood and fan appear to comply with NFPA 96 requirements. The age of the system is not know but it is reported that the installation, although not original to the facility, is likely in excess of 15 years old.

Grease Hood Recommendation: The hood and fan are approaching the end of their published service lives (10 -20 years for the hood and 15–20 years for the fan) and should be considered for replacement.

Dishwasher: The dishwasher in the kitchen does not appear to be served by an exhaust hood.

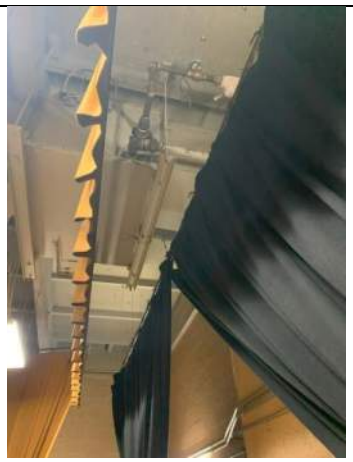
Dishwasher Recommendation: Furnish and install a hood to remove heat and moisture from the space.

Electric Range: There is an electric range located in the Life Skills room that is not served by an exhaust hood.

Electric Range Recommendation: An exhaust hood with tempered makeup air, complying with the requirements of NFPA 96 should be installed to provide exhaust ventilation for the appliance.

Clothes Dryer: In at least one location it was observed that a clothes dryer was vented through a lint trap into the space in which it was located.

Clothes Dryer Recommendation: These dryers should be vented to the building exterior.

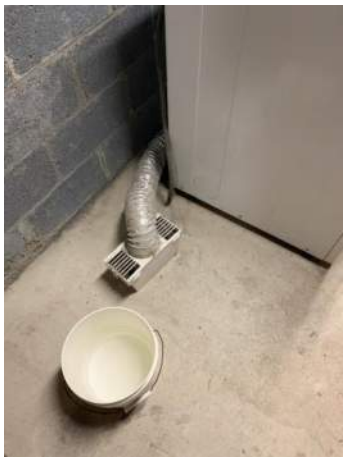








VRF Systems: Mitsubishi VRF (variable refrigerant flow) ductless split heat pump systems have been recently installed approximately 1 year ago for the classrooms throughout the center section of the 1950's wing and the 1970's addition to provide cooling and first stage heating in the classrooms. Given a published service life of 15-20 years, these heat pumps are well within their anticipated dependable lives. The heat pump systems incorporate wall mounted interior units sized at 15,000 BTU/hr connected to exterior condensing units mounted on stands on the roof above. As configured, there are three to four interior units connected to each exterior unit, placing three to four classrooms with similar exposure on each system zone. The heat pumps are approximately one year old and are controlled from stand-alone controllers. The heat pump controls are not integrated with the central building automation system and are operated as standalone units. It is reported that, during seasons requiring mechanical cooling, the unit ventilators are de-energized to prevent "fighting" between the economizer cooling and mechanical cooling functions of the two systems. As such, during times when the heat pumps are calling, the ventilation for the classrooms is not operational.





VRF System Recommendation: Integration for the heat pump controllers to the building automation system (BAS) should be considered (refer to other sections herein for building automation system upgrade recommendations). As such, the ventilation systems would be enabled to operate at all times when the facility is occupied and the building automation system will dictate whether first stage heating (heat pump), second stage heating (fintube), economizer cooling, or mechanical cooling is required based upon space conditions, with appropriate dead bands between the heating and cooling setpoints to optimize system effectiveness.

Library: The Library incorporates an older Mitsubishi cooling only ductless split with a ceiling mounted evaporator and a rooftop condensing unit to provide space cooling. The unit operates through stand-alone controls. This unit is reported

to be in excess of 15 years of age placing it near the end of its published service life (15-20 years). Additionally, there is a modern heat pump installed in the area to provide space cooling and first stage heating.

Library Recommendation: Remove the cooling only ductless split. Integrate the newer heat pump unit with the BAS proposed elsewhere herein.



Heat Pump Integration: The main office area utilizes steam radiation for space heating and recently installed VRF heat pumps for mechanical cooling and first stage heating. The fintube is original to the facility while the heat pumps are approximately one year old. The heat pumps consist of wall mounted interior units at the Admin Area and Principal's Office connected to a single exterior unit.



Heat Pump Recommendation: Integration for the heat pump controllers to the building automation system should be considered. As such, the ventilation systems would be enabled to operate at all times when the facility is occupied and the building automation system will dictate whether first stage heating (heat pump), second stage heating (fintube), or mechanical cooling is required based upon space conditions, with appropriate dead bands between the heating and cooling setpoints to optimize operational effectiveness.

Unit heaters, Fin-tube, & Cabinet unit heaters: There are strips of fin-tube heaters, unit heaters, and cabinet unit heaters that heat exterior spaces, and egress paths such as corridors, stairways, and bathrooms with exterior exposure. All such equipment is original to the facility and nearing the end of their service life (20-25 years).



Recommendations: Replace the terminal heating equipment to maintain supplemental heating as required.

De-humidification: The crawlspaces below each of the east and west classroom areas each contain

de-humidification units to help mitigate humidity and moisture issues.

De-humidification Recommendation: The units appear to be dehumidifying the spaces adequately. No action appears to be necessary.

Building Automation System (BAS): the BAS within the facility is a pneumatic system that is original to the facility and outdated.

BAS Recommendation: Replace the existing pneumatic control system with an electronic, direct digital control (DDC) building automation system. The system shall integrate all new and existing systems as recommended elsewhere herein.



Plumbing

Water Entrance: There is a 2" cold-water line entering the building from the municipal service. The water line comes into the building at the basement level where it serves a 2" domestic water service to the building. The water entrance incorporates both an RPZ backflow prevention device and a meter. The service appears original to the facility.

Domestic hot water is provided by a storage type, natural gas fired, condensing water heater located in the boiler room. The heater is manufactured by AO Smith and has a storage capacity of 100 gallons with an input rating of 199,000 BTU/hr. The unit was recently replaced (within the last year). Water is stored at 120 degrees for distribution throughout the facility. A digital master mixing valve, also located in the boiler room provides control for the hot water temperature in accordance with ASSE 1017 requirements. There is currently no independent loop to serve the kitchen area. By code, sinks used for food prep and cleanup are required to utilize 140 degree water or a means for chemical sanitation.



Recommendation: Consider increasing the temperature at the water heater to 140 degrees and add a second mixing valve and domestic water loop to serve the kitchen area. The existing

mixing valve will continue to provide 120 degree water to the remaining areas of the facility.

Piping: Domestic hot and cold water piping that was visible is primarily copper with soldered fittings. Piping appears to be well insulated throughout.

Recommendation: No action required.

The sanitary waste and vent piping where accessible in the basement is constructed of a mix of cast iron and PVC. Although existing building plans were not accessed during the assessment, there are several 3" and 4" sanitary risers exiting the basement area. Much of the piping appears original to the facility with no reported issues.



Recommendation: Maintain piping in place. Replace/upgrade piping as planned renovations occur.

Grease Trap: There is an interior grease trap at the kitchen area which serves the 3-compartment sink and dishwasher. The age of the grease trap is not known but it is reportedly cleaned and serviced routinely with no reported operational issues.

Grease Trap Recommendation: Continue to maintain and service the unit. Replace the unit with planned renovations.

Plumbing fixtures: Water closets are manual flush valve type, floor mounted and wall mounted, of vitreous china construction. Bathroom lavatories are wall mounted white vitreous china units with single handle manual faucets where observed. Bathroom lavatories have exposed traps below them and have no ADA trim kits over the exposed piping. Classroom lavatory/sink units are stainless steel drop in units with single handle faucets and separate bubblers. Modern drinking fountains with bottle fillers have been installed and were in good working order. In general, the plumbing fixtures were well maintained and operational, however they appear, for the most



part to be original to the facility placing them at the end of their published service lives (20-40 years).

Plumbing Fixture Recommendations: Consider replacing the fixtures and trim in the near future as they are at the end of their published service lives. All exposed piping should be covered as required by Maine plumbing code to meet ADA requirements.



Rain water: Original drawings were not accessed for this facility. As such, sizes for the rainwater piping are not known. There are no reported issues with the system.

Rain Water Recommendation**:** No action noted.

Natural Gas: Natural gas enters the facility at the south wall of the central classroom wing and drops to the basement area for routing to the kitchen cooking equipment, the boilers, and the domestic water heater. The piping is constructed of schedule 40 steel with screwed fittings. The entrance contains a meter and main pressure regulator at the exterior of the building, supplied by the municipal service.



Natural Gas Recommendation: No action required.

Fire Protection

The school does not incorporate a sprinkler system.

Recommendation: Furnish and install a complete, NFPA 13 compliant sprinkler system throughout the facility with planned renovations.

Electrical Systems Narrative

- The seventy year old main distribution panel and its associated main service disconnect, building meter, parallel gym panel, and its sub panels are long overdue for replacement and upgrade. The current configuration set up for the building service appears to exceed the 400 A limit imposed by CMP on pole mounted

transformers and a new pad mounted transformer should be installed to supply the building to go along with an entirely new electrical service for the building.

- The lighting fixtures for the building were recently upgraded to LED models approximately 4 years ago but dimmable switches in the classrooms were not included in the upgrade. The principle said that installing dimmable switches in the classrooms would be very helpful to the teachers for many of the presentations they provide their students.

- Emergency egress and exit light fixtures appear to be adequate and have an appropriate layout. It is recommended that a "pull the plug test" be performed to ensure all units are functioning properly, emergency lighting units are aimed appropriately to illuminate the intended egress paths, and to ensure 1.5 hours of battery life is available.

- A photometric test should be performed on the exterior lighting to verify adequacy for security camera coverage. The number and placement of all of the building's security cameras, both interior and exterior, needs to be evaluated for meeting the security needs of the facility.

Electrical System Distribution

Service for the building comes from a 150 kVA pole-mounted CMP transformer through the meter of the building to a 600 A rated main disconnect switch. From there, it appears to feed power to another disconnect switch labeled as "Heating", a panel board behind the stage in the gym (with no rating information labels) that powers gym loads, and a Trumbull Electric switchboard installed in 1954 with a 400 Amp bus rated, three-phase, 4 wire, 208Y/120 V service that has a main circuit breaker with no labeled trip rating which appears to function as the main distribution panel (MDP) for the rest of the building. Historical peak load

Main Distribution Panel



Building Meter



demand from the past 12 months for the building was recorded by CMP to be 53 kVA. There is no surge protector installed for the MDP making everything powered by the building vulnerable to lighting strikes. There is a disconnect switch labeled as "Lighting New Addition" mounted next to the MDP with a conduit feed from it. It is unclear whether this disconnect is fed directly from a lug mounted feed from the MDP or if it is fed from one of the circuit breakers labeled as "L1B Panel" or "L1A Panel". There are five three phase circuit breakers on the MDP but six loads listed on the MDP schedule. There is a circuit 1, 2, 7, and 8 labeled on the circuit breakers with the other circuit breaker completely unlabeled. None of the load circuit breakers on the MDP have a labeled trip rating.

Since the MDP is 70 years old, it is worth noting that the intended service life for electrical distribution switchboards is only 30 years and with age, the equipment will become less reliable and more prone to failure while at the same time (because the unit has been out of production for more than 70 years) the prospect of finding repair parts will become increasingly remote. The meter, the main service disconnect, the gym panel board, and most of the sub panels appear to be the same age as the MDP. All of the sub panels listed as being fed from the main distribution panel are fully circuited with no spares available for expansion. The gym panel (which appears to be fed separately from the MDP) has a piece of tape with a hand written note to "keep these off" for its circuits 15, 17, and 19.

On the surface, the school appears to be loaded in excess of the 400 A limit for pole mounted transformers imposed by CMP since its heating loads (its rating is unlabeled but is likely in excess of 200 A), the gym panel (also unlabeled but is the apparent size of a typical 200 A panel), and the 400 A MDP appear to all be fed from the 600 A main disconnect switch in parallel with one another. If any expansion to the school is planned or if there are any new renovations or

Main Disconenct Switch



Emergency Lighting Battery Packs



upcoming projects that would place additional electrical load are planned, a new pad mount transformer should be installed to supply the building and the 70 year old distribution service will need to be replaced.

Interior Lighting and Controls

The facility underwent a major re-fit in approximately 2020 in which all of its lighting fixtures were replaced with LED models. Lighting controls throughout the facility are standard on-off switches with occupancy sensors for the hallways and office areas (not in the classrooms). The principle expressed that there is a desire to have LED dimmer switches installed in the classrooms to aid in presentations.

Exterior Lighting and Controls

Six exterior lighting fixtures were observed around the building and three were observed in the parking lot. The custodial staff believe all of the exterior lights are photometric operated and don't really have any knowledge over whether the lighting coverage is adequate noting that nearly everyone who works at the school's day ends before 5 PM.

Security for the facility could be improved by performing a lighting photometric survey to ensure adequate lighting is supplied around the parameter of the building so that exterior cameras can capture what is happening around the building at night.

Emergency Stand-by Power System

No emergency or stand-by power system is installed at the facility. If it is desired and funded, we would need to meet with the building ownership and facility management to determine what loads would be required to have emergency standby power (i.e. just essential loads such as life safety and freeze protection, or for just certain shops, or even whole building) and whether

Fire Alarm Annunciator



Fire Alarm Distribution Panel (Internal)



installing an emergency power system is justified from a cost vs reliability gain perspective.	
Emergency Lighting System Installed EXIT signs appear to all be NFPA 101.9 size and location conformant. This building's emergency exit lighting is powered through battery packs that are integrated with the lights. The custodial staff stated that they test the emergency lighting operation monthly but do not verify whether it has 1.5 hours of battery life. It is recommended that both the EXIT signs and emergency lighting be tested IAW with the guidelines of NFPA 101 7.9.3 to ensure they are NFPA 101.7.9.1.3 and 101.7.10.4 compliant.	
Fire Alarm System The Fire Alarm Panel notifies a private 3rd party (Maine Fire Protection Systems) who then notifies the fire department in the event of an alarm. The custodial staff believe the fire alarm panel was installed in 2019 and informed me that it has received regular maintenance throughout its life. The building does not have a sprinkler system, but its smoke detector coverage appears adequate throughout and it does have a fire department key box (Knox) installed by its main entrance.	
Lighting Protection System The facility does not have a lightning protection system. The owner has not requested or budgeted to have one installed and an NFPA 780 Annex L Lighting Risk Assessment has not been performed for the facility.	
Data/Telephone/Classroom Intercom/Clock Systems The main WIFI hub and the local Network Servers for the facility are located in the library and is equipped with a battery backup UPS. The building staff who accompanied my tour had no	

knowledge of the adequacy of the UPS or whether it has been tested. The building utilizes a modern Valcom announcing system that allows the front office to make building wide announcements as well as to make announcements that are addressable to individual classrooms but the system is one-way only meaning the front office can talk to the classrooms but the classrooms cannot speak back. There is no building wide clock system.	
Security <u>Access Control Systems</u> The only door to the building with electronic access control is the front main entrance that has a card reader. A buzzing unit is installed to alert the receptionist of visitors and grant them access via an unlock button located at the front reception desk. The building does have a fire department key box (Knox) located near the main entrance. <u>CCTV Systems</u> Security cameras are installed in most of the building hallways and building entrances. The cameras use a wireless interface to connect with the building server and their video can be accessed through private security company account, which the receptionist and facility management have access to. Facility management has expressed concern about the current placement of the interior camera coverage and would like it to be re-evaluated. <u>Intrusion Detection Systems</u> The facility has motion detectors for each of the exterior doors of the building that feed a central security panel (Life Safety Power) that is integrated with the fire alarm panel. The security alarm system for these doors is activated at the end of work-day by a control at the reception desk. Notification of any triggered security alarm is sent to a 3rd party (Maine Fire Protection Systems) who then notifies facility management and the police as required.	

2.2 Sylvio Gilbert Elementary School – Architectural Observations

Gilbert Elementary School was built in 1969 and had two small additions – one in 1987 for an elevator and one in 1990 for a boiler room.

The school is designed with a centrally placed double height combination gymnasium/cafeteria, with programmatic spaces wrapping around the center. The classrooms, clustered in the four corners flare out from the otherwise square plan. Compared with the other Augusta elementary schools, the classrooms are irregular in shape and tend to be larger than is typical.

The school is a two-story steel frame with slab on grade at the first floor and 4" of concrete on a metal deck for the second floor. The roof is also steel framed. Exterior walls are 4" masonry to the interior with 2" of insulation, an air gap and a brick veneer. Interior corridors, stairwells and the center gym are also CMU. While none of the CMU Walls are load bearing, they do need to resist lateral loads and it is not known whether the walls include reinforcing.

The building does not have a sprinkler system. The MDP and transformer are less than 10 years old and in good condition.

Entry Vestibule A generous access-controlled entry vestibule was created in the original lobby sometime after the original construction. Though spacious, the entry vestibule has no direct connection to the administrative suite; a camera and intercom system are used for staff to review visitors and grant access into the building. Visitors are within the secured perimeter of the school before they make in person contact with staff.	
Administration The administrative suite contains one large open administrative area, a storage closet and a principal's office. A social worker's office, previously accessed through the admin area now opens only to central corridor.	 

Classrooms

Classroom sizes vary greatly by locations: first floor classrooms are typically larger and serve Pre-K, Kindergarten and first grade; second floor classrooms serve second through sixth grades. All first-floor rooms except for Pre-K have doors to exterior. None of the interior doors meet the requirements for ADA clearances.

Classrooms shapes are varied and irregular due to the geometry of the building, but all classrooms have a continuous ribbon of windows above unit ventilators. Each room also has two separate niches – one with two small toilet rooms and a coat/back peg wall and one with a sink (non-ADA), casework and a separate walk-in storage room.

Teacher's report enjoying the shape of the rooms and the abundant natural light. Younger grades enjoy the size and shapes for setting up centers, but those teaching upper grades (5-6) find it hard to set up middle school style desks in such irregularly shaped rooms.

The Pre-K program in Augusta is housed entirely at Gilbert. 96 pre-K students attend one of two half day sessions; each session has three classrooms.





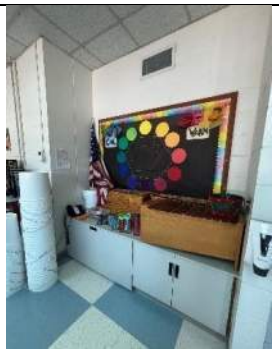






Music and Art Room

Music and art share a room at Gilbert which is a typical classroom on the first floor. The teachers for each are shared with Lincoln.



Gymnasium/Cafeteria

Gilbert has a “Cafetorium,” a combination cafeteria and gym. On three of the four walls, fold down tables are either stored in a niche in the walls or lowered at lunchtime to seat students. The lowering and/or putting up process takes five minutes at the beginning and end of each set of lunch periods. The fourth wall is a stage.

Students collect their food at a servery set up in an open area between the kitchen and gymnasium and walk to their tables in the gym; inside the gym is a table for condiments, and end of lunch trash containers and rolling carts to stack dirty trays.

Gilbert shared a PE teacher with Lincoln. The gym contains a full height climbing wall on the same wall as the stage. There is a small storage room off one side of the gym.



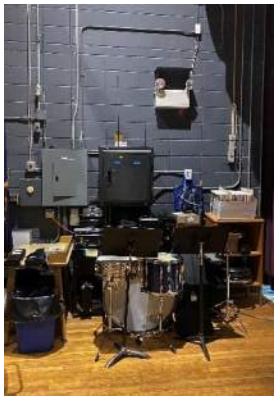


Stage

The stage is used for music practice and band storage. It is accessed by two stairs – one from the gym and one from the hallway; there is no ADA access to the stage.







Servery Serving stations are set up in the open space between the kitchen and cafeteria. Serving carts or rolled into the kitchen between meals. There is one serving spot at the kitchen window and coolers for milk. A dish window into the kitchen is not used by students since trays are collected in the gym.	 
Kitchen The kitchen contains a dish area, a large walk-in dry storage room and multiple coolers and freezers. Fixed and moveable equipment occupies the middle of the space. There is a large washing machine and dryer side by side in a niche. An air lock vestibule provides direct access to/from the exterior.	  
Library The rectangular library spans between the north and south corridors on the second floor and serves as a de facto corridor for that side of the building which is disruptive for classes or schoolwork taking place in the	

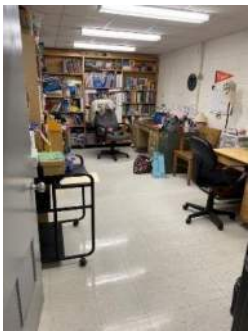
library. Glass walls on two sides of the space add to the fishbowl feeling inside. With its long, narrow footprint, lack of exterior windows and typical classroom height ceiling, the space can feel low and compressed.

There is a dedicated office for the librarian and a separate AV room which often doubles as a room for private phone conversations for second floor staff.

The librarian notes that the space overheats easily. A linear shelving layout makes it hard to keep an eye on all spaces – she uses strategically placed mirrors to provide visual oversight of all nooks. The east side stair in the building, connecting first to second floor, is accessed directly off the library, adding further disruption to the space.









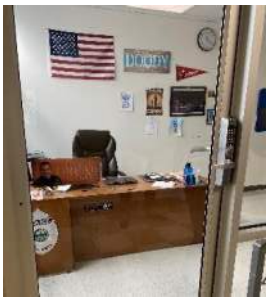
Dean and SRO

The original building design included three "study areas" at interior corners on the east side of the first and second floors. These rooms have glazed partitions to the interior corridor and receive borrowed lite from adjacent light wells.

On the second floor, one of the areas has been turned into two separate offices – one for the SRO who serves all of the elementary schools but only has a dedicated office at Gilbert, and one for the Dean of Students. The other second floor room is for Intervention pull outs.

On the first floor, this room is used for testing and conferences.





Special Education

Gilbert has three special education rooms. There are two Behavior Rooms, one for K-2 on the first floor and one for 3-6 on the second floor. Both were created from regular classrooms, so they include small toilet rooms, sinks and storage areas. The K-2 room has an exterior door, a storage room, and an area with padded walls.

There is also a dedicated special education room on the second floor.





	 
Intervention Rooms A dedicated intervention room on the second floor is a standard classroom with toilet rooms and storage. Across the hall in a former glass “study area” is a pull-out area for additional intervention work.	 
Guidance and Student Council A resource room has an interior divider. One half is used for guidance and one half for student council meetings. The guidance side of the room has a storage closet similar to that of the classrooms.	
Speech The speech therapist has a dedicated room on the second floor. It is interior with no natural or borrowed light.	

Exterior Exterior walls are a brick veneer with an interior air space and insulation cavity and exposed CMU on the inside. The building has a steel frame system so while the exterior CMU walls are not load bearing, they are required to resist lateral	

loads. Refer to the structural report for more information on this.

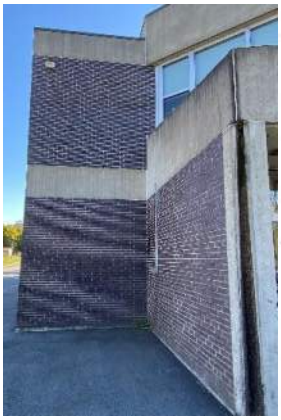
The 16 exterior hollow metal doors appear to be in good condition as do the windows.

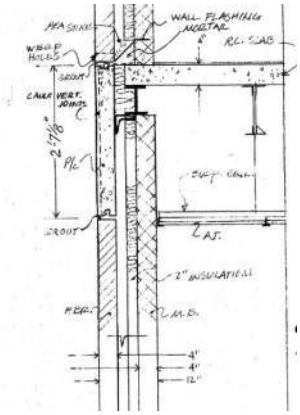
Roofs are flat (low sloped) and pitched to internal drains. Intricate downspout details are worked into corner of structure. Roofs and flashing are in generally good condition with occasional spots of standing water on lower roofs visible from the second floor. Roofs are believed to have 4.7" of insulation and were last reroofed in 2023.

The exterior of brick and pre-cast is in good shape. There is some discoloring of brick from water exposure. Weeps are visible at both upper and lower levels.









2.2.1 Sylvio Gilbert Elementary School – Structural Observations and Recommendations

Gilbert School structure is in good condition. The facility has been well maintained. Some issues related to the building meeting current code requirements have been identified and presented in this study. They include the follow items:

Existing structural drawings make no mention of any specific lateral resistance system to meet current code lateral load requirements from wind or seismic events. Existing infill masonry perimeter walls comprised of 4" brick outer wythe/4" middle space with 2" rigid insulation/4" inner CMU wythe may not meet current code requirements for resistance to current code lateral loads from wind and seismic events for loads perpendicular to the wall surface.

There may be some infill framing conditions for original skylight openings on main high roof level. Makeup of any framing at those possible infills is not known. Should be exposed for review here. Further review of the low roof over the 1990 +/- Boiler Room Addition is required for load capacity check for code required snow drift loads.

Gilbert School roofing is in very good condition. Additional review is required as noted here based on specific code edition that might be in force at time any future re-roofing activities are performed including required roofing insulation thickness and structural upgrade requirements.

General

Applicable Building Code – 2015

American Society Of Civil Engineering Minimum Design Loads For Buildings And Other Structures – 2010

Most of the Gilbert School was constructed in 1969 +/-. Architectural and structural design was by Henneberg & Henneberg from Cambridge, Massachusetts. Architectural and structural drawings for the 1969 +/- areas were made available for this study. It was reported that a small elevator addition was constructed in 1987 +/-, and a Boiler Room addition was constructed in 1990 +/-. No drawings were available for the Elevator or Boiler Room additions. Observations here are based on the 1969 +/- drawing materials, and observations made/discussions during site visit to the school in September 2024. Observations were limited to items that were visible during the site visit. No destructive testing was performed to expose hidden structural items.

Roofing

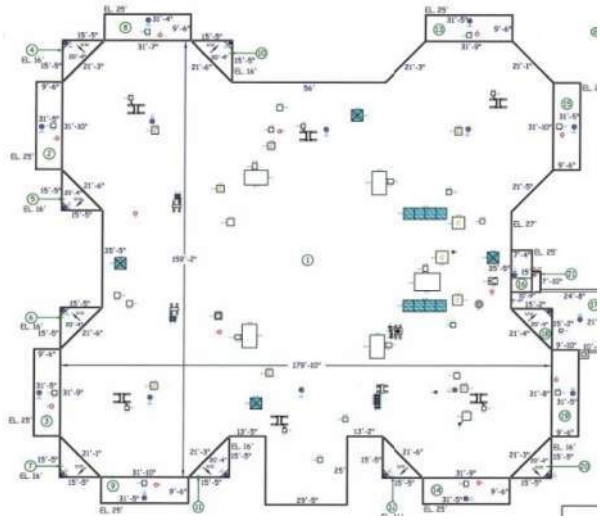
Gilbert School currently has 0.60" EPDM roofing membrane. The EPDM roofing is in very good condition. It was reported that the building was re-roofed in 2023, and that original stone ballast was removed and additional ½" layer of insulation added at that time over original insulation levels. Based on data supplied from G & E Roofing the bulk of the existing building has a total of 4.7" insulation (2 original layers of 2.1" Iso with additional ½" layer of Isogard HD from 2023 re-roofing.

The current 2018 Bureau of General Services (BGS) reroofing and structure upgrade guidelines currently require that all roofs be

Google Maps



Key Plan Roof



evaluated for IBC 2015 design loading requirements, and the application of an R-30 minimum roof insulation. This is what has been used for this study to review existing framing components.

By the time any design work is done on this building it is possible that the state of Maine will have adopted the IBC 2021 building code. Observations made here should be reviewed for buildings code in force at time any modifications are made here.

- Per 2021 IBC requirements a minimum aged insulation thickness of 5.5" is likely required to meet R-30 insulation requirement. If need to meet the 2021 IBC requirements at time any work is performed likely additional 0.8" +/- insulation or cover board may be required here to achieve the overall insulation thickness of 5.5".

The original stone ballast was resisting code-specified wind uplift load requirements, both on roofing materials and roof structure. It is not known how well the roofing materials were fastened down for the recent re-roofing activities. When next re-roofing work is performed, it is recommended to review fastening of roofing materials to substrate layers to verify uplift loads can be resisted without weight of stone ballast. Roof joists typically have steel bridging lines designed to resist code-specified loads from wind uplift. When next re-roofing work is performed, it is recommended that uplift bridging on existing roof joists be reviewed to verify can support wind uplift loads. It may be possible to resist uplift loads by adding new layer(s) of cover board below the EPDM roofing in lieu of upgrading/adding uplift bridging to the existing roof joists.

Exterior Elevation



Boiler Room Roof



Structure

Gilbert School consists of a two-story steel frame with metal roof and floor decking, open

web roof and floor steel joists and steel beam/column support lines.

Foundations/Slabs:

Foundations/slabs consist of perimeter frost and interior concrete column footings, and concrete slabs-on-grade. No concerns were identified in the slabs-on-grade or with the exposed elements of the building foundation system. Any minor foundation cracks observed should be watched and should be sealed to prevent water intrusion and/or freeze thaw damage.

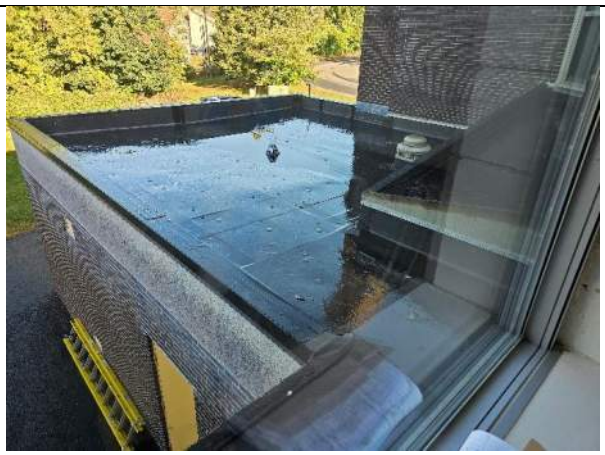
Second-Floor Framing:

The second-floor framing for Gilbert School consists of a 4" +/- concrete slab on metal form deck supported by open-web steel joists that bear on interior and perimeter steel beam/column lines. The existing floor framing appears to be as shown on the existing structural drawings. The floor framing was observed at a number of locations and no signs of damage, distress or overload were observed in the floor framing.

Roof Framing:

General:

Gilbert School has a series of flat roof areas. No slope roofs. The bulk of the building footprint is all at one high level with a series of slightly lower roofs (about 2'-6" +/- below main roof) at various points around the building perimeter, and additional lower roofs down at/near the second-floor level at other points around the building perimeter. The roof over the 1990 +/- Boiler Room addition is one of the roofs at/near the second-floor level. The lower roofs down at the second-floor level are subjected to modern building code specified roof snow drift loads that require that roof framing on the low roof of any roof steps be designed for increased snow loads from blowing snow that may drift in at these roof steps and collect in greater depths/load levels than at areas of the roof away from the roof steps. Drifting roof snow load provisions were



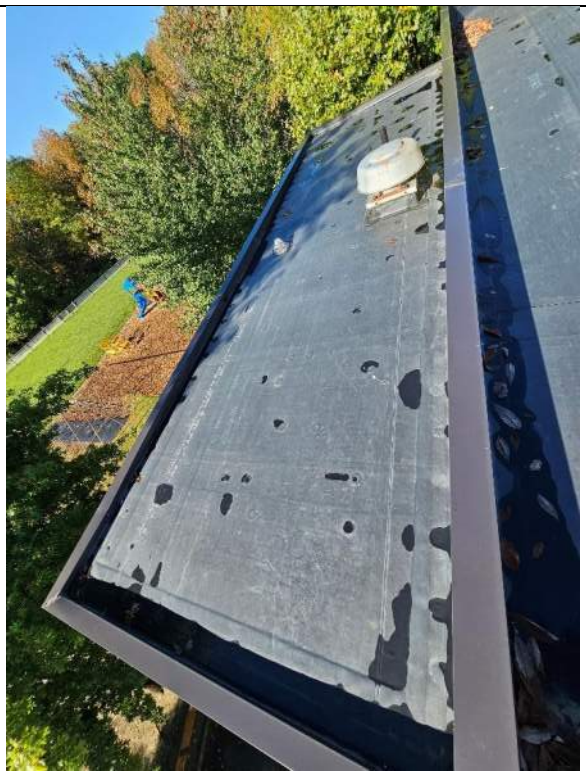
Roofing



Low Roofing

introduced in building codes in the mid-1970's, after the design of Gilbert School. The low roofs along the man high roof level that are only about 2'-6" +/- lower than the main roof level are not down low enough to create any snow drift loads at those roof steps.

The roof framing at Gilbert School consists of steel roof joists and steel beam/column support lines with a metal roof deck. The existing roof framing appears to be as shown on the existing 1969 +/- structural drawings, with the exception that areas of cantilevered roof framing out to various building corners shown on the existing structural drawings were not constructed, and that there are some areas on the existing 1969 +/- drawings where skylights are shown that do not exist. It is not known if these skylights were not constructed, or if these skylight openings were filled in with added framing at some point in time. The roof framing was observed at a number of locations and no signs of damage, distress or overload were observed in the roof framing. There was no evidence that framing upgrades or reinforcements have been made since the original building construction.





Code Review

Second-Floor Framing:

The existing structural drawings show the loads levels that the existing floor framing at Gilbert School was designed for including 60 pounds per square foot (psf) Live Load in classroom spaces, and 100 psf Live Load for remaining spaces. The required floor load levels from current code compare well to those required from original construction. As part of this study some floor joists were reviewed to confirm load carrying capacity meets these load requirements. Based on that review it appears that the existing floor framing does meet current code floor load requirements.

Roof Framing:

General:

The existing structural drawings show that the existing roof framing was designed for a 50psf uniform roof snow load at all roof surfaces, plus the dead load of the roof framing and roofing components including the original stone roof ballast. It is reported that the stone ballast was removed during recent re-roofing activities. Stone ballast typically weighs approximately 12psf. The removal of the stone ballast has added new capacity for the existing roof framing to resist code specified snow loads. Existing low roofs at/near the second-floor level are subjected to code specified roof snow drift load levels in excess of any uniform roof snow load. As part of this study, selected roof framing components at both the high roof level without snow drift loads and at the low roof levels at/near the second-floor level subjected to snow drift loads were reviewed for current code snow load requirements.

Current building code requires that roof framing for Gilbert School away from any drift zones be capable of supporting a 54 psf uniform roof snow load plus the dead weight of any framing and roofing components. The 54 psf uniform snow load requirement is slightly in excess of the 50 psf design load but the removal of the original stone ballast has increased the snow load capacity of the existing roof framing. Selected roof framing components at non-drift areas were reviewed as part of this study. Based on this review, it appears that the existing roof framing does meet current code uniform snow load requirements.

As part of this study, the roof framing components at low roof areas at/near the second-floor level subjected to snow drift levels in excess of the uniform snow drift loads were also reviewed. Based on this review, it appears that the existing low roofs subjected to snow drift loads meet current code snow drift load requirements with the possible exception of the low roof over the

Roofing





Roof Framing

Boiler Room addition from 1990 +/-. No structural drawings were available for the roof framing over the Boier Room. The low roof over the Boler Room needs further review to determine if roofing reinforcement is required at that location to resist current code snow drift load requirements.

Lateral Loads:

Building codes contain load provisions for lateral loads on buildings/building components from wind and seismic events. These lateral load requirements have changed a great deal since the original construction of Gilber School. The existing 1969 +/- structural drawings make no reference to any existing specific quantifiable lateral bracing system for the two-story steel frame. The only possible lateral resistance elements are the perimeter wall masonry infills, and perhaps some of the interior masonry walls. The existing drawings do not have any data on how/if these masonry elements might be tied to the existing steel frame in a manner than can offer sufficient resistance to meet current code lateral load levels. A complete review of any lateral resistance provided by the masonry infill perimeter walls and interior walls is considered beyond the scope of this report. Further study will be required here to determine if adequate lateral resistance exists for Gilbert School to meet the current code required lateral load conditions.

Masonry Perimeter Walls:

The existing 1969 +/- structural drawings indicate that the perimeter walls for Gilbert School are 12" overall thickness comprised of outer 4" brick wythe, middle 4" space containing 2" rigid insulation and 4" inner CMU wythe. These perimeter walls do not support any vertical loads as they are built above/below/in between the steel frame elements. The architectural drawing section indicate that ties are to be provided between inner and outer wythes across the middle 4" space but refer to the structural drawings for

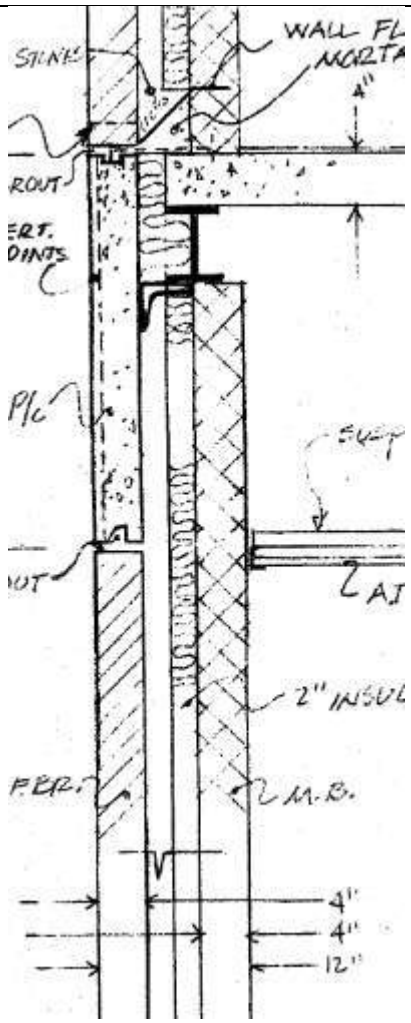






Masonry Erimeter Walls

tie spacing/makeup specifics. Does not appear that the structural drawings contain any specifics for these ties. Current code requirements have lateral load provisions from wind and seismic events for loads acting perpendicular to these perimeter walls. The perimeter walls must be able to span horizontally or vertically to distribute the applied lateral loads to the building frame system. Given the makeup of these walls it is unlikely if they contain any vertical reinforcing steel. They might contain horizontal reinforcing but that is not known here from available data. If there are enough ties here it might be possible to try to determine if the inner and outer wall wythes are tied together sufficiently to act as an overall 12" thick wall instead of two individual outer and inner wythes to better resist lateral loads but not enough is known on the ties for this sort of determination. No data is provided on the drawing materials for how the tops/bottoms/ends of these infill perimeter walls might be tied to surrounding frame elements. Without such data. it is not possible to determine if the perimeter masonry walls can support the code specified wind loads perpendicular to the wall surface. Further data/study will be required here to make this sort of determination.



Structural Recommendations:

Perform a building envelop review of the condition of the existing 4" exterior walls for potential deterioration and moisture infiltration.

Review potential removal of exterior CMU walls and interior CMU walls for impact to the existing building lateral resisting system.

Review degree/level of planned renovation and Code threshold for upgrade of existing building structural systems to present Code requirements.

Additions should be laterally (wind and seismic) independent of existing construction.

Expose original skylight openings on main high roof level to expose existing framing if intended to be infilled.

Review of the low roof over the 1990 +/- Boiler Room Addition for load capacity review for compliance to Code required snow drift loads.

Recommend to confirm presence of uplift bridging on existing roof joists and existing capacity to support Code required wind uplift loads.

Final observations and recommendations should be reviewed for the actual buildings code in force at time any modifications are made.

2.2.2 Sylvio Gilbert Elementary School – Mechanical, Plumbing and Electrical Observations and Recommendations

Gilbert Elementary School was constructed in 1971 and comprises approximately 52,600 square feet. Below is an assessment of the school's mechanical, plumbing, fire protection, and electrical systems in their current conditions.



Mechanical/HVAC

Boiler: The building is served by two natural gas fired Viessmann Vitocrossal CM2 condensing boilers sized at 663 MBH each. The boilers were installed in approximately 2013 and are in good operational condition, well within their dependable service lives (20-25 years). The boilers exhaust to the existing masonry stack via CPVC vents. Combustion air for the boilers is pulled from the boiler room and not ducted to the exterior. It is reported that the motorized damper at the exterior wall mounted louver is interlocked with burner operation such that the MOD opens when the boiler is firing.

Boiler Recommendation: Although no immediate action is warranted for the boilers as they are in good operating condition and within their published service lives, it should be verified that combustion air meets the requirements of NFPA 31 and the boiler manufacturer based upon the space volume. Per NFPA 31 definition, the boiler room is

considered a confined space based upon the fact that the overall space volume is less than 50 cf per 1,000 BTU of boiler capacity. As such, combustion air is required to be introduced to the space from the exterior via high and low openings in the wall that provide 1 square inch of free area per 4,000 BTU of firing rate. In this case, a louver free area of 332 square inches or 2.3 sf would be required. At 50% free area, that equates to approximately 36" x 18", high and low.



Heating Hot Water Distribution: Two 7.5 hp constant speed circulator pumps circulate hot water through the facility to terminal units for heating. The hot water distribution system is comprised of schedule 40 steel for the larger mains and copper for the branch piping. Piping appears well insulated throughout.

Heating Hot Water Recommendation:
Although the pumps are approximately seven years old, well within their published service lives (10-15 years), consideration should be given to replacement with variable speed "smart" pumps as part of the hot water distribution system upgrades recommended elsewhere herein.



Classroom Ventilation: Classroom and Study Area ventilation is provided by rooftop energy recovery ventilators (ERV's). There is one ERV, sized at 3,500 cfm which serves each of the three classroom pods, as well as the adjacent corridors and Study Areas. A fourth ERV, sized at 4,500 cfm serves the Southeast Classroom Pod and Library area. Each ERV incorporates an enthalpy style energy recovery wheel to transfer energy from the exhaust air into the fresh ventilation air. Additionally, each unit includes a duct mounted hot water coil to temper the fresh air during the heating season. The RTU's are ducted to each of the classrooms in each pod to deliver fresh air and provide general exhaust. The units were installed in approximately 2011, placing them at or near their published service lives (15-18 years). Although mechanical plans for

the ERV installation were not available for review at the time of the assessment, based upon the capacity of the units and an overview of the areas served the units appear to be sized appropriately to meet the requirements of ASHRAE 62.1-2016 for acceptable indoor air quality.

The two bathrooms in each classroom are exhausted separately via rooftop exhaust fans. The exhaust fans appear original to the facility and are beyond their published service lives (20-25 years).

Classroom Ventilation Recommendation: Consider replacement for the ERV's in the next 5 years. The replacement units, like the existing, will be configured to supply tempered fresh air to each classroom. The exhaust will be re-configured such that the ERV's to pull exhaust air from the bathrooms in each classrooms so as to replace the existing exhaust fans and recovery the energy from that required exhaust stream.



Assembly Space Ventilation: The Gymnasium/Cafeteria is served by a fifth ERV unit which incorporates a hot water heating coil and an enthalpy style energy recovery wheel. It is sized at 5,000 cfm and was installed in approximately 2011.

Assembly Space Ventilation Recommendation: Consider replacement for the ERV unit in the next five years.



Admin Ventilation: The Administrative area appears to be provided with fresh air/exhaust air ventilation from the rooftop ERV which serves the northwest Classroom Pod.

Admin Ventilation Recommendation: See recommendations above for Classroom ventilation.

General Exhaust: As noted elsewhere herein, there are roof mounted exhaust fans

used for exhaust in bathrooms and storage rooms throughout the school. The fans are operational, but appear to be original to the facility and at the end of their published service lives.

General Exhaust Recommendation: The fans are at the end of their published service lives and should be considered for replacement.

Grease Hood: There is a grease hood serving the kitchen cooking appliances, with grease baffles. The hood is equipped with an Ansul system, and appears to be in good working order. The associated exhaust fan is on the roof above and also appears in good working order. The hood and fan appear to comply with NFPA 96 requirements. Make-up air for the hood is provided by a ducted makeup air unit located above the outdoor storage room. The makeup air unit incorporates a hydronic heating which is served by a hot water to glycol heat exchanger located within the space. The unit provides 100% outside air ducted from a sidewall louver. The grease hood, associated exhaust fan, makeup air unit, hydronic heat exchanger and circulator pump all appear original to the facility and are beyond their published service lives (10 -20 years for the hood, 15-20 years for the makeup air unit, and 15–20 years for the fan).



Grease Hood Recommendation: The hood and fan are at the end of their published service lives and should be considered for replacement. Consider replacing the makeup air unit with a natural gas fired unit to eliminate the need for a glycol heat exchanger.



Dishwasher: The dishwasher in the Kitchen is served by a condensate hood ducted to an exhaust fan on the roof. Like the grease hood, the condensate hood appears original to the facility and at the end of its published service life (10 -20 years for the hood and 15–20 years for the fan).

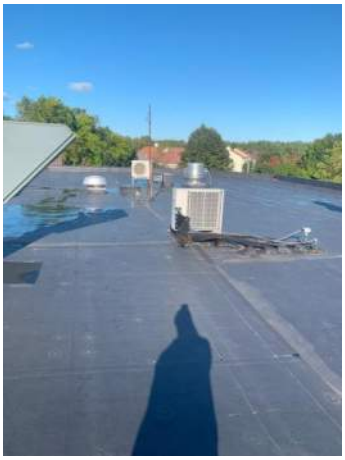
Dishwasher Recommendation: The hood and fan are at the end of their published service lives and should be considered for replacement.

Clothes Dryer: In at least one location it was observed that a clothes dryer was vented through a lint trap into the space in which it was located. These dryers should be vented to the building exterior.

VRF Systems: Mitsubishi VRF (variable refrigerant flow) ductless split heat pump systems have been recently installed (approximately 4-5 years ago for the second floor classrooms and 1 year ago for the first floor classrooms) to provide cooling and first stage heating in all classrooms. Given a published service life of 15-20 years, these heat pumps are well within their anticipated dependable lives. The heat pump systems incorporate wall mounted interior units sized at 12,000 BTU/hr connected to exterior condensing units hung on the exterior wall adjacent to the classrooms for the first floor rooms and mounted on stands on the roof for the second floor classrooms. As configured, there are three to four interior units connected to each exterior unit, placing three to four classrooms with similar exposure on each system zone. The heat pumps are controlled from stand-alone controllers. The heat pump controls are not integrated with the central building automation system and are operated as standalone units. As noted elsewhere herein, fintube radiation provides supplemental heating for the Classroom Pods.

VRF System Recommendation: Integration for the Mitsubishi heat pump controllers to the building automation system should be considered such that the first stage heating and mechanical cooling functions may be controlled in concert with the central ventilation and supplemental fintube heating through the building automation system.





Library: The Library is served by two older Daikin heat pump units with stand-alone controllers. These units include ceiling cassette style evaporators with rooftop condensing units. The age of these units is not known.

Library Recommendation: Replace the heat pumps as they fail and integrate the new units with the building automation system.



Admin Heat Pumps: The main office area utilizes recently installed VRF heat pumps for mechanical cooling and first stage heating. The heat pumps consist of wall mounted interior units at the Admin Area and Principal's Office connected to a single exterior unit mounted on the wall. The Guidance Office does not appear to incorporate mechanical cooling. As noted elsewhere herein, fintube radiation provides supplemental heat for the spaces.

Admin Heat Pumps Recommendation: Integration for the Mitsubishi heat pump controllers to the building automation system should be considered. As such, the ventilation systems would be enabled to operate at all times when the facility is occupied and the building automation system will dictate whether first stage heating (heat pump), second stage heating (fintube), or mechanical cooling is required based upon space conditions, with appropriate dead bands between the heating and cooling setpoints to optimize system control.



Supplemental Heat: Classrooms, corridors, and support spaces throughout incorporate hydronic terminal heating equipment (fintube, cabinet unit heaters, and convectors) to provide primary and/or secondary heating. The terminal heating equipment was installed to replace the original electric heating equipment in approximately 2013. The heating terminals are within their published service lives (20-25 years), however, it is reported that the piping serving the fintube in some of the classroom

pods may be undersized as the heating is not adequate on the coldest days.

Supplemental Heat Recommendation: Furnish and install upgrades to the hydronic fintube radiation and associated hot water supply/return piping as required to provide adequate heating on the colder days during the heating season.

Building Automation System (BAS): the BAS within the facility is a Siemens electronic direct digital control (DDC) system. The system was installed during the original facility construction and has been recently upgraded to the new Desigo software. Much of the hardware associated with the system was replaced with the unit ventilator replacement one year ago. It is reported that sub-panels associated with the system are upgraded on an annual basis to ensure that the latest software and controllers are in place.

BAS Recommendation: Continue to maintain the system in place. As equipment is replaced, the controllers and hardware associated with the equipment should be replaced and integrated with the DDC BAS. As outlined above, consideration should be given to replacement integration for the heat pump controllers to the BAS.

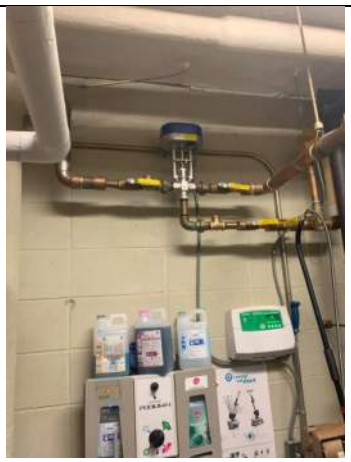


Plumbing

Water Entrance: There is a 4" cold-water line entering the building from the municipal service. The water line comes into the building at the Outdoor Equipment Storage area where it reduces in size to a metered 2 ½" service with a pressure regulator which then splits to serve a 2" domestic water service for the building and a 1 ½" service to a sprinkler head located in the boiler room. Both the domestic water service and the boiler room sprinkler service incorporate a reduced pressure zone backflow prevention device. The service is original to the facility.



Domestic hot water is provided by a storage type, natural gas fired, condensing water heater located in the boiler room. The heater is manufactured by AO Smith and has a storage capacity of 100 gallons with an input rating of 199,000 BTU/hr. The unit was installed in approximately 2013. Water is stored at 120 degrees for distribution throughout the facility. A digital master mixing valve, also located in the boiler room provides control for the hot water temperature in accordance with ASSE 1017 requirements. The recirculation pump associated with the domestic hot water system was observed as non-operational on the date of the site visit. There is currently no independent loop to serve the kitchen area. By code, sinks used for food prep and cleanup are required to utilize 140 degree water or a means for chemical sanitation.



Water Heating Recommendations: The water heater is nearing the end of its published service live. Based upon the fact that heaters of the same manufacture and vintage have already been replaced at two schools within the district, replacement for the existing unit should be considered. Consider increasing the temperature at the water heater to 140 degrees and add a second mixing valve and domestic water loop to serve the kitchen area. The existing mixing valve will continue to provide 120 degree water to the remaining areas of the facility.

Replace the hot water recirculation pump to restore operation.

Piping: Domestic hot and cold water piping that was visible is primarily copper with soldered fittings. Piping appears to be well insulated throughout.

Piping Recommendation: No action required.

Sanitary Waste: The sanitary waste, based upon a review of the original drawings, exits the facility as an 8" service at the Main Lobby. The sanitary waste is directed to a municipal

service. Domestic waste and vent piping was not specifically accessed for observation during the assessment but it is reported to be primarily constructed of cast iron and no issues with drainage were reported.

Sanitary Waste Recommendation: No action required.

Grease Trap: There is an interior grease trap which serves the 3-compartment sink and the dishwasher. It is reported that the trap is routinely serviced with no reported issues. It is not clear the age of the existing trap.

Grease Trap Recommendation: Continue to service/maintain the trap and replace as required.

Plumbing fixtures: Water closets are manual flush valve type, with a combination of floor mounted and wall mounted units, all of vitreous china construction. Urinal is wall mounted white vitreous china with manual flush valve. Lavatories are wall mounted white vitreous china units with primarily single handle manual faucets. There are several lavatories that have exposed traps below them and have no ADA trim kits over the exposed piping. Classroom sinks are stainless steel drop in units with two handle gooseneck faucets and separate bubblers. Modern drinking fountains with bottle fillers have been installed and are in good working order. In general, the plumbing fixtures were well maintained and operational, however they appear, for the most part to be original to the facility placing them at the end of their published service lives (20-40 years).

Plumbing Fixture Recommendations: Consider replacing the fixtures and trim in the near future as they are at the end of their published service lives. All exposed piping should be covered as required by Maine plumbing code to meet ADA requirements.

Rain water: Based upon a review of the original drawings, roof drains carrying rain





water exit the facility as a 10" service at the southeast kindergarten room. There are no deficiencies reported with this system.

Rain Water Recommendation**:** No action required.

Natural Gas: The natural gas regulator/meter is located near the boiler room where it splits to serve the kitchen cooking equipment and the boilers/ domestic water heater. The piping is constructed of schedule 40 steel with screwed fittings. The entrance contains a meter and main pressure regulator at the exterior of the building, supplied by the municipal service.

Natural Gas Recommendation: No action required.



Fire Protection

Sprinkler System: The school does not incorporate an NFPA 13 automatic sprinkler protection system. As noted elsewhere herein, there is a 1 ½" sprinkler service which provides coverage to the boiler room area only.

Sprinkler System Recommendation: It is our understanding that any planned renovations to this facility will require the installation of an NFPA 13 compliant automatic sprinkler system throughout.

Electrical Systems Narrative

- The main distribution panel and the 208/120 V distribution panel and its associated transformer are less than 10 years old and in excellent condition with some room for expansion on many of the sub-panels. The sub-panels themselves appear to be original to the building (constructed in 1988) but appear to be in good condition.

- The lighting fixtures for the building were recently upgraded to LED models approximately 4 years ago but dimmable

switches in the classrooms were not included in the upgrade. The principle said that installing dimmable switches in the classrooms would be very helpful to the teachers for many of the presentations they provide their students.

- Emergency egress and exit light fixtures appear to be adequate and have an appropriate layout. It is recommended that a "pull the plug test" be performed to ensure all units are functioning properly, emergency lighting units are aimed appropriately to illuminate the intended egress paths, and to ensure 1.5 hours of battery life is available.

- A photometric test should be performed on the exterior lighting to verify adequacy for security camera coverage. The number and placement of all of the building's security cameras, both interior and exterior, needs to be evaluated for meeting the security needs of the facility.



Main Distribution Panel

Electrical Systems Distribution

The main distribution panel (MDP) is a 2016 Eaton Pow-R-Line PRL4B switchboard with a 800 Amp bus rated, three-phase, 4 wire, 480/277 V service powered by an underground feeder routed from the secondary side of a 225 kVA three phase 12.47 kV / 480/277 V pad-mounted transformer. The MDP is protected by a 800 A main service disconnect circuit breaker. Historical peak load demand from the past 12 months for the building was recorded by CMP to be 98 kVA. There is no surge protector installed for the MDP making everything powered by the building vulnerable to lighting strikes. The MDP has 3 phase circuit breakers that supply the kitchen air handling unit, the stage air handling unit, and 480V panels PP-1, PP-2, PP-3, PP-4, and PP-4A, as well as a 3 phase 480/277 V : 208/120 V transformer



Pad Mounted Transformer

bank that supplies panel LP which is a 2016 Eaton Pow-R-Line 600 Amp bus rated, three-phase, 4 wire, 208/120 V switchboard that feeds the eight 208/120 V panels that are in the building.

Both the main distribution panel and the 208/120 V panel that serves as the main distribution for the 208/120 V panels and its associated transformers are only 8 years old and appear to be in excellent condition. The remainder of the sub panels in the building appear to be original to the construction of the school (1988) but also appear to be in good condition with many having spare circuit breakers for future expansion.



Interior Lighting and Controls

The facility underwent a major re-fit in approximately 2020 in which all of its lighting fixtures were replaced with LED models. Lighting controls throughout the facility are standard on-off switches with occupancy sensors for the hallways and office areas (not in the classrooms). The principle expressed that there is a desire to have LED dimmer switches installed in the classrooms to aid in presentations.

Emergency Light



Exterior Lighting and Controls

Four exterior lighting fixtures were observed around the building and three were observed in the parking lot. The custodial staff believe all of the exterior lights are photometric operated and don't really have any knowledge over whether the lighting coverage is adequate noting that nearly everyone who works at the school's day ends before 5 PM.

Security for the facility could be improved by performing a lighting photometric survey to ensure adequate lighting is supplied around the parameter of the building so that exterior

cameras can capture what is happening around the building at night.

Emergency Stand-by Power System

No emergency or stand-by power system is installed at the facility. If it is desired and funded, we would need to meet with the building ownership and facility management to determine what loads would be required to have emergency standby power (i.e. just essential loads such as life safety and freeze protection, or for just certain shops, or even whole building) and whether installing an emergency power system is justified from a cost vs reliability gain perspective.

Emergency Lighting System

Installed EXIT signs appear to all be NFPA 101.9 size and location conformant. This building's emergency exit lighting is powered through five central battery packs that each supply individual strings of emergency lights. The custodial staff stated that they test the emergency lighting operation monthly but do not verify whether it has 1.5 hours of battery life It is recommended that both the EXIT signs and emergency lighting be tested IAW with the guidelines of NFPA 101 7.9.3 to ensure they are NFPA 101.7.9.1.3 and 101.7.10.4 compliant.

Fire Alarm System

The Fire Alarm Panel notifies a private 3rd party (Maine Fire Protection Systems) who then notifies the fire department in the event of an alarm. The custodial staff believe the fire alarm panel was installed in 2019 and informed me that it has received regular maintenance throughout its life. The building does not have a sprinkler system, but its smoke detector coverage appears adequate throughout and it does have a fire

Fire Alarm Panel



Fire Key Box



department key box (Knox) installed by its main entrance.	
Lighting Protection System The facility does not have a lightning protection system. The owner has not requested or budgeted to have one installed and an NFPA 780 Annex L Lighting Risk Assessment has not been performed for the facility.	
Data/Telephone/Classroom Intercom/Clock Systems The main WIFI hub and the local Network Servers for the facility are located in the library and is equipped with a battery backup UPS. The building staff who accompanied my tour had no knowledge of the adequacy of the UPS or whether it has been tested. The building utilizes a modern Valcom announcing system that allows the front office to make building wide announcements as well as to make announcements that are addressable to individual classrooms but the system is one-way only meaning the front office can talk to the classrooms but the classrooms cannot speak back. There is no building wide clock system.	
Security <u>Access Control Systems</u> The only door to the building with electronic access control is the front main entrance that has a card reader. A buzzing unit is installed to alert the receptionist of visitors and grant them access via an unlock button located at the front reception desk. The building does have a fire department key box (Knox) located near the main entrance. <u>CCTV Systems</u>	

Security cameras are installed in most of the building hallways and building entrances. The cameras use a wireless interface to connect with the building server and their video can be accessed through private security company account, which the receptionist and facility management have access to. Facility management has expressed concern about the current placement of the interior camera coverage and would like it to be re-evaluated. <u>Intrusion Detection Systems</u> The facility has motion detectors for each of the exterior doors of the building that feed a central security panel (Life Safety Power) that is integrated with the fire alarm panel. The security alarm system for these doors is activated at the end of work-day by a control at the reception desk. Notification of any triggered security alarm is sent to a 3rd party (Maine Fire Protection Systems) who then notifies facility management and the police as required.	

2.3 Lincoln Elementary School – Architectural Observations

Lincoln Elementary School was built in 1988, and sits on a compact, urban 3.8-acre site in a residential neighborhood less than one block off Western Avenue in Augusta.

Lincoln Elementary School was built at the same time as Farrington Elementary School, using the same construction methods and similar design elements. It is a non-combustible steel frame building with concrete floor slabs and steel deck on the upper levels. The exterior is exclusively brick and masonry veneer construction that is in good condition.

Entry Vestibule and Administration

The entry vestibule is on the middle level of the building. While centrally located, there is no direct connection between the vestibule and the administrative office. A camera and intercom system are used for staff to review visitors and grant access into the building Visitors then need to go up half a story to get to the office.

All rooms in the administrative suite have been turned into support spaces. A former supply closet now houses KBH. The original conference room is now social work. The principal lists having a conference room as a top priority.

A small nurse's office with bathroom is part of the administrative suite.





Typical Classrooms

The classroom wing is a stacked double loaded corridor with CMU walls. Diagonally shaped insets at each room or pair of rooms provide a gathering spot outside of each room. Classrooms range from 675 sf to 850 sf.

Each classroom has a storage niche just inside: hooks and cubbies against the corridor wall and permanent casework approximately 3'-0" opposite this with tall storage and a non-ADA sink in base cabinets. At the end of the storage niche is a small toilet room.



Three of the lower-level classrooms have doors directly to the outside.	
Special Education Lincoln has four SPED rooms. There are two FLS rooms, one for kindergarten - grade 2, one for grades 3-6. Additionally there are two Behavior Rooms. Lincoln also has one Intervention room.	 
OT/PT A dedicated OT/PT room is adjacent to and shares a bathroom with FLS; staff reports needing to keep door to OT/PT locked from the FLS side.	
Guidance There is a dedicated guidance office with a waiting niche off the second-floor corridor.	
Music and Art Room Music and Art share the same classroom, with a rotating schedule, and shares those teachers with Gilbert. The the room does not have any exterior windows or borrowed natural light from other spaces although an interior storage room is against an exterior wall.	
Gymnasium Lincoln has a dedicated gymnasium and shares a gym teacher with Gilbert. The size of the gym	

works well for classes but there is no room for floor seating at games – all seating is on the stage. There are two storage rooms off the gym, one of which doubles as an office for the gym teacher.

Adjacent to the gym are boys and girls multi-user bathrooms each with shower rooms. Showers off the boys bathroom are still operational; that area in the girls bathroom is used for cleaning supplies and extra clothing for students.

A stage on one long side of the gym is access by stairs from the gym and stairs and/or a ramp from the cafeteria. It is used for special events (book fairs), after school drama club and holiday music concerts.





Library

The library is on the upper classroom level and is only slightly larger than a typical classroom and has no direct natural light. There is interior glazing to the hallway and to the cafeteria below.

An original computer lab off the library now serves as a Title 1 room. A small closet in the back of the library holds the server, library supplies and has a small sink.



Cafeteria

The cafeteria at Lincoln is an open space at the main entry level with a large wall of windows looking out at the entry to the building.

While separate from the gymnasium, the cafeteria space is also the path between the classroom and administrative wing and the gym, stage and music/art room. The open layout does not provide a dedicated path between sides of the school. The school's main entry vestibule is adjacent to the cafeteria and visitors to the school pass see and pass close to the seating area.

Linear tables with integrated bench seating are laid out for the four lunch periods and then closed up during cleaning and reopened for the next day.





Kitchen and Serving Area

The far end of the open area, opposite the kitchen, becomes a servery during meals.

Lunch is served at a window from the kitchen and at rolling carts in the open area opposite the kitchen. There is a dedicated dish room with a window to the cafeteria. The kitchen includes a cooler and freezer, dry storage and a small office.





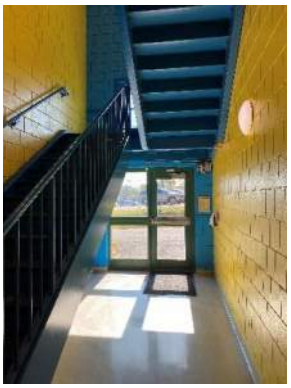
Stairs and Elevator

Lincoln occupies three different levels - a traditional two-story classroom wing and a mid-level high ceiling wing with the entry, cafeteria and kitchen, gym, stage and music/art room.

Two sets of open, half flight stairs connect the entry level with the classroom corridors below and above. There are two enclosed CMU fire stairs in the classroom wing – one at each end.

The elevator makes three stops – one at each classroom level and one at the mid level.

Additionally, an interior stair and ramp provide access to the stage and music room.

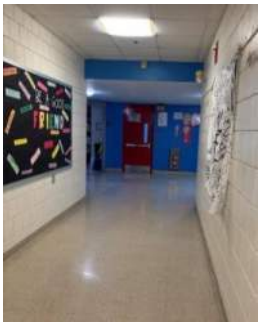






Corridors

Corridor walls are CMU. Classroom entries are typically paired with indented angled entry walls to each classroom creating a niche off the corridor at each set of entries. In one case, the niche is used as a pull out space for individual instruction.





Exterior

The exterior veneer is primarily brick with some split face and glazed masonry and masonry bands on either CMU or stud wall backup. Materials appear in good condition with some evidence of water infiltration is visible at concrete foundation walls and below windows. Hollow metal entry doors are in good shape with little to no rust.

The two primary types of wall construction are EW1: masonry veneer, air space, 2” insulation, CMU backup and EW2: masonry veneer, air space, 6” steel stud with batt insulation. It is unknown whether the CMU walls (exterior and interior) have grouted cores or vertical steel reinforcement.



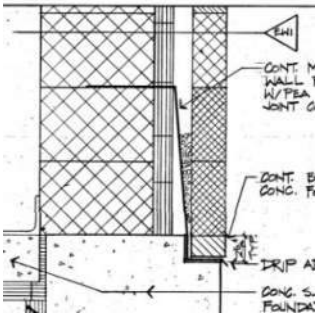


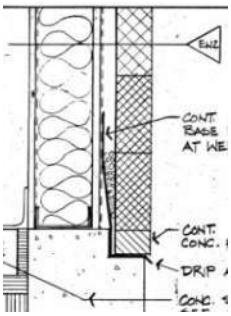
Small areas of wood siding on decorative gable ends are worn and in need of replacement; they are not part of the actual building envelope. Metal flashing and fascia trim is in good shape. Visible edges of metal lintels at overhangs are beginning to rust.

Replacement vinyl windows were installed within the last ten years and have more years of life in them.

Flat roofs appear to have 5” of rigid insulation and were re-roofed in 2020.







Site

At 3.8 acres, Lincoln stands out as the smallest school site in the district. Per DOE recommendations, a school with this student population would ideally occupy a 12.8-acre site.

Beyond the building footprint the site includes a small entry plaza, an open park/playground that is shared with the city, a small, dedicated parking lot and bus drop off loop and an access road around the building which hugs the building perimeter tightly.

The parking lot has 32 spots, less than half of the spots required by city zoning and teachers and staff park on adjacent neighborhood streets which they report as challenging, especially in winter with snow banks.

Parent drop off and pick up occurs in multiple locations and involves students crossing streets and the parking lot.









2.3.1 Lincoln Elementary School – Structural Observations and Recommendations

Lincoln School structure is in very good condition. The facility has been well maintained. Selected areas of the existing framing were reviewed as part of this study relative to current code floor and roof snow load requirements. Based on that review, it appears that the existing framing complies with current code provisions with the possible exception of some of the existing CMU walls. It is not known if any of the existing CMU walls have any vertical reinforcing steel rebars in grouted CMU cores.

Lincoln School roofing is in very good condition. Additional review is required as noted here based on specific code edition that might be in force at time any future re-roofing activities are performed including required roofing insulation thickness and structural upgrade requirements.

General

Applicable Building Code – 2015

American Society Of Civil Engineering Minimum Design Loads For Buildings And Other Structures – 2010

Lincoln School was constructed in 1988 +/-. Architectural design was by Portland Design Team (PDT) from Portland, Maine. Structural design was by Chapin Associates from Norwood, Massachusetts. Architectural and structural drawings were made available for this study. Observations here are based on those drawing materials, and observations made/discussions during site visit to the school in September 2024. Observations were limited to items that were visible during the site visit. No destructive testing was performed to expose hidden structural items. Data here is very similar to that provided for Farrington School as both were constructed at same time with same design team.

Roofing

Lincoln School currently has 0.60” EPDM roofing membrane. The EPDM roofing is in very good condition. It was reported that the entire building was re-roofed in 2019 and 2020 and that original stone ballast was removed and additional ½” layer of insulation added at that time over original insulation levels. Based on data supplied from G & E Roofing all the flat roof areas have a total of 5” insulation (2 original layers of 2-1/4” Iso with additional ½”

Google Maps

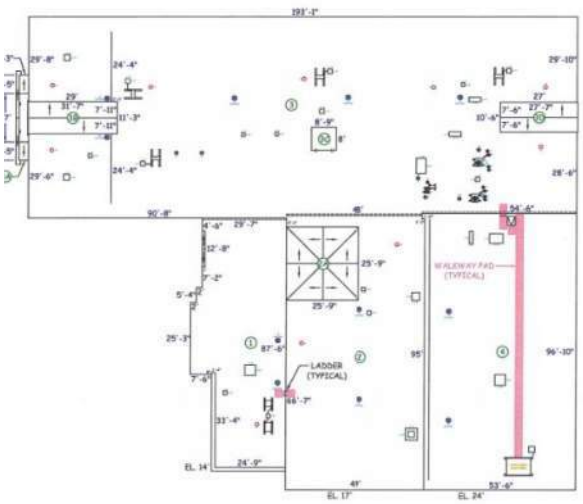


Roof Key Plan

layer of Isogard HD from 2019/2020 re-roofing).

The current 2018 Bureau of General Services (BGS) reroofing and structure upgrade guidelines currently require that all roofs be evaluated for IBC 2015 design loading requirements and the application of an R-30 minimum roof insulation. This is what has been used for this study to review existing framing components.

- By the time any design work is done on this building it is possible that the state of Maine will have adopted the IBC 2021 building code. Observations made here should be reviewed for buildings code in force at time any modifications are made here. Per 2021 IBC requirements a minimum aged insulation thickness of 5.5" is likely required to meet R-30 insulation requirement. If need to meet the 2021 IBC requirements at time any work is performed likely additional ½" +/- insulation or cover board may be required on all roof surfaces here.
- The original stone ballast was resisting code-specified wind uplift load requirements, both on roofing materials and roof structure. It is not known how well roofing materials were fastened down for recent re-roofing activities. When next re-roofing work is performed, it is recommended to review fastening of roofing materials to substrate layers to verify uplift loads can be resisted without weight of stone ballast. Roof joists typically have steel bridging lines designed to resist code-specified loads from wind uplift. When next re-roofing work is performed, it is recommended that uplift bridging on existing roof joists be reviewed to verify can support wind uplift loads. It may be possible to resist uplift loads by adding new layer(s) of cover board below the EPDM roofing in lieu of upgrading/adding uplift bridging to the existing roof joists.



Exterior Elevation



Structure

Lincoln School consists of a two-story Classroom Wing, and a variable height one-story wing with Gym, Cafeteria, Stage and Administrative (GCSA) spaces.

Foundations/Slabs:
Foundations/slabs consist of perimeter frost and interior concrete support walls, and concrete slabs-on-grade. No concerns were identified in the slabs-on-grade or with the exposed elements of the building foundation system. Any minor foundation cracks observed should be watched and should be sealed to prevent water intrusion and/or freeze thaw damage.

Second-Floor Framing:
The second-floor framing in the GCSA Wing consists of a 3" +/- concrete slab on metal deck supported by open-web steel joists that bear on steel beam/column lines. The existing floor framing appears to be as shown on the existing structural drawings. The floor framing was observed at a number of locations and no signs of damage, distress or overload were observed in the floor framing.

Roof Framing:

General:
Lincoln School has a series of flat roof areas. No slope roofs. The Classroom Wing addition is all at one level. The GCSA Wing has three different flat roof levels. The existing structural drawings indicate tighter roof joist spacings near all roof step areas in GCSA Wing. This tighter spacing is due to fact that the building codes require that roof framing on the low roof side of any roof steps be designed for increased snow loads from blowing snow that may drift up to these roof steps and collect in greater depths/load levels than at areas of the roof away from the roof steps. Drifting roof snow load provisions were introduced in building codes in the mid-1970's, about 15 years before the design of Lincoln School so





Roofing Surface



the expectation here is that the Lincoln School roof framing would have been designed for snow drift loadings.

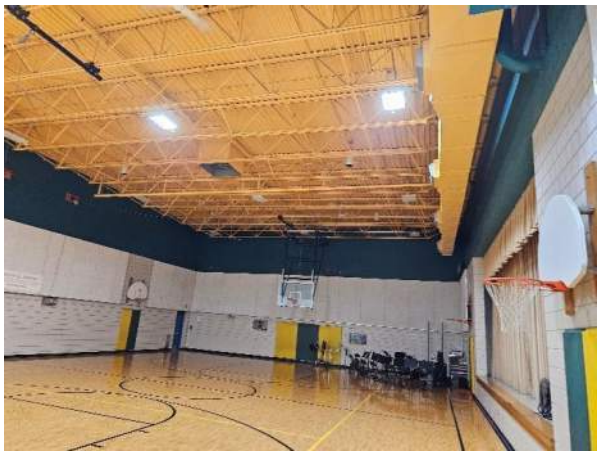
Classroom Wing:
The Classroom Wing is steel-framed with steel roof and floor joists and steel beam/column support lines with a 1-1/2" deep Type B metal decking surface. The existing roof framing appears to be as shown on the existing structural drawings. The roof framing was observed at a number of locations and no signs of damage, distress or overload were observed in the roof framing. There was no evidence that framing upgrades or reinforcements have been made since the original building construction.

GCSA Wing:
The GCSA Wing has steel roof framing supported by concrete masonry unit (CMU) bearing walls with some steel beam headers/columns at openings in the CMU support walls with a 1-1/2" deep Type B metal decking surface. The existing roof framing appears to be as shown on the existing structural drawings, including areas where roof joist spacings have been reduced due to roof snow load drift conditions. The roof framing was observed at a number of locations and no signs of damage, distress or overload were observed in the roof framing. There was no evidence that framing upgrades or reinforcements have been made since the original building construction.





Gym Framing



Code Review

Second-Floor Framing:
The existing structural drawings show the loads levels that existing floor framing in Classroom Wing was designed floor including 40 pounds per square foot (psf) Live Load in classroom spaces, and 100 psf Live Load for public spaces. The required floor load levels from current code compare well to those required from original construction. As part of this study some floor joists were reviewed to

confirm load carrying capacity meets these load requirements. Based on that review it appears that the existing floor framing does meet current code floor load requirements.

Roof Framing:

General:
The existing structural drawings show that the existing roof framing was designed for a 70psf Ground Snow load plus the dead load of the roof framing and roofing components including the original stone roof ballast. It is reported that the stone ballast was removed during recent re-roofing activities. Stone ballast typically weighs approximately 12psf. The removal of the stone ballast has added new capacity for the existing roof framing to resist code specified roof snow loads. The building code in force at the time of the original building construction in 1988 was likely the 1986 BOCA Building Code. The 1986 BOCA Building Code contained provisions for snow drifting including snow drifting on low roofs at roof steps that were likely used to design low roof framing at roof step conditions. As part of this study selected roof framing away from, and at roof steps, were reviewed for current code snow load requirements, including snow drift loads.

Classroom Wing:
The Classroom Wing has a single flat roof level so there are no snow drift considerations for the Classroom Wing. The roof framing at selected areas of the roof were reviewed as part of this study for the uniform (non-snow drift) roof snow loads required from building code provisions. Based on this review it appears that the existing roof framing does meet current code snow load requirements.

GCSA Wing:
The GCSA Wing has three levels of flat roof so has roof snow drift loads at three roof step locations. The roof framing at these three drift areas, and at selected framing areas away from drift zones, were reviewed as part of this

study. Based on this review it appears that the existing roof framing does meet current code snow load requirements including snow drift requirements. <u>CMU Walls:</u> The GCSA Wing has CMU bearing walls supporting roof framing. The CMU walls on building perimeter, such as those on the outside walls of the Gym and Administrative spaces, are subject to code-specified lateral wind and seismic loads acting perpendicular to the CMU wall surfaces. The existing CMU walls must be capable of supporting any applied gravity loads from joist bearings in addition to the lateral loads from the applicable building code. The existing structural drawings indicate 12" CMU at tall outside walls such as at the Gym spaces, and 8" CMU at shorter outside walls such as at Administration spaces. There is no indication on any of the existing architectural or structural drawings if there is any vertical steel rebar reinforcing in grouted cores in any of the existing CMU walls. It is often the case that vertical reinforcing in grouted CMU cores is used to provide necessary load capacity for CMU walls. The presence, or absence, of vertical reinforcing in grouted cores in the CMU walls must be established before these CMU walls can be reviewed against current code requirements. Our recommendation here is that selected existing CMU walls such as the tall outside wall of the Gym and the shorter outside wall of the Administrative area be scanned/explored for the presence of existing vertical reinforcing to inform further work to determine if the existing CMU walls meet current code requirements.	

Recommendations:

Selected existing CMU walls such as the tall outside wall of the Gym, and the shorter outside wall of the Administrative area, should be scanned/explored for the presence of existing vertical reinforcing to determine if the existing CMU walls are reinforced and if meet current code requirements. Review potential removal of exterior CMU walls and interior CMU walls for impact to the existing building lateral resisting system.

Review degree/level of planned renovation and Code threshold for upgrade of existing building structural systems to present Code requirements.
Additions should be laterally (wind and seismic) independent of existing construction.

Recommend confirming presence of uplift bridging on existing roof joists and existing capacity to support Code required wind uplift loads.

Final observations and recommendations should be reviewed for the actual buildings code in force at time any modifications are made.

2.3.2 Lincoln Elementary School – Mechanical, Plumbing and Electrical Observations and Recommendations

Lincoln Elementary School was constructed in 1988 and comprises approximately 38,000 square feet. Below is an assessment of the school's mechanical, plumbing, fire protection, and electrical systems in their current conditions.



Mechanical / HVAC

Boiler: The building is served by two natural gas fired Viessmann Vitocrossal CM2 condensing boilers sized at 663 MBH each. The boilers were installed in approximately 2013 and are in good operational condition, well within their dependable service lives (20-25 years). The boilers exhaust to the existing masonry stack via CPVC vents. Combustion air for the boilers is pulled from the boiler room and not ducted to the exterior. It is reported that the motorized damper at the exterior wall mounted louver is interlocked with burner operation such that the MOD opens when the boiler is firing.

Boiler Recommendation: Although no immediate action is warranted for the boilers

as they are in good operating condition and within their published service lives, it should be verified that combustion air meets the requirements of NFPA 31 and the boiler manufacturer based upon the space volume. Per NFPA 31 definition, the boiler room is considered a confined space based upon the fact that the overall space volume is less than 50 cf per 1,000 BTU of boiler capacity. As such, combustion air is required to be introduced to the space from the exterior via high and low openings in the wall that provide 1 square inch of free area per 4,000 BTU of firing rate. In this case, a louver free area of 332 square inches or 2.3 sf would be required. At 50% free area, that equates to approximately 36" x 18", high and low.

Heating Hot Water Distribution: Two Grundfos variable speed hot water circulator pumps circulate hot water through the facility to terminal units for heating. The hot water distribution system is comprised of schedule 40 steel for the larger mains and copper for the branch piping. Piping appears well insulated throughout.

Heating Hot Water Recommendation: No immediate action is warranted. Pumps are in good operating condition and within their published service lives (10-15 years).

Classroom Ventilation: Most classrooms are each served by a wall mounted unit ventilator which provides heat, ventilation, and economizer cooling throughout the classroom areas. Each unit ventilator incorporates a two way hot water control valve and a through wall ventilation sleeve connected to a sidewall louver for ventilation intake. Each classroom contains a low relief grille ducted to a pressure relief vent through the sidewall to relieve the ventilation air. The unit ventilators were replaced throughout approximately one year ago and are in excellent operating condition. The units incorporate recently bi-polar ionization devices to help mitigate the spread of airborne viruses.



One classroom at the second floor area (southwest corner) is served by a ducted unit ventilator. Like the sidewall UV's, this unit was replaced approximately one year ago and incorporates a hot water heating coil, mixing box for fresh air introduction and economizer cooling, and bi-polar ionization device.



Classroom Ventilation Recommendation: No immediate action is warranted. Unit ventilators are essentially new.

Assembly Space Ventilation: The Gymnasium and Cafeteria are each served by a central, heating only air handling unit located in mechanical space adjacent to each area. The air handling units each incorporate a hot water heating coil, mixing box to introduce fresh air, economizer cooling, and CO2 demand controlled ventilation based upon space occupancy. Additionally, the air handlers have each been upgraded to include bi-polar ionization devices within the mixing boxes to help mitigate the spread of airborne viruses. The air handling units are original to the facility, which places them at the end of their published service lives (25-30 years).



Assembly Space Ventilation Recommendation: Air handling systems are at the end of their published service lives. Although they appear to be operationally sound currently, replacement should be considered. In replacing the units, energy recovery should be included as required by the current energy standard for times when occupancy within the spaces served dictates large percentage of outdoor air. Replacement units should consider the addition of mechanical cooling to improve occupant comfort during the shoulder seasons.

Other Ventilation: The Art Room, Music Room, Multi-Purpose (Function) Room, Computer Room, and OT/PT areas are each served by ducted unit ventilators which contain a hot water heating coil and a mixing box with economizer

cooling for fresh air introduction. The fresh air is introduced through either sidewall louvers or rooftop gravity intake ventilators. The ducted unit ventilators, like the classroom units were replaced in their entirety approximately one year ago. Like the other air handling systems, they each incorporate bi-polar ionization devices.



Other Ventilation Recommendation: No action is required. Unit ventilators are essentially new.

Admin Ventilation: The Administrative area does not appear to contain a system of fresh air ventilation as is required by ASHRAE 62.1-2015. Exhaust ventilation is provided for the Nurse's area and restrooms by two rooftop exhaust fans.

Admin Ventilation Recommendation: Furnish and install an energy recovery ventilator (ERV) to provide exhaust air for restroom and copier while bringing in fresh air to ventilate the occupied spaces throughout the area. The ERV will incorporate a duct mounted heating coil to temper the fresh air during the heating season.

General Exhaust: There are roof mounted exhaust fans used for exhaust in bathrooms and storage rooms throughout the school. The fans are operational, but appear to be original to the facility and at the end of their published service lives (20-25 years).



General Exhaust Recommendation: The fans are at the end of their published service lives and should be considered for replacement.

Grease Hood: There is a grease hood serving the kitchen cooking appliances, with grease baffles. The hood is equipped with an Ansul system, and appears to be in good working order. The associated exhaust fan is on the roof above and also appears in good working order. The hood and fan appear to comply with NFPA 96 requirements. Make-up air for the hood is transferred in from the adjacent Cafeteria area

through a series of laminar flow diffusers located near the hood. Although in overall good working order, the system appears original to the facility and at the end of its published service life (10 -20 years for the hood and 15–20 years for the fan) .



Grease Hood Recommendation: The hood and fan are at the end of their published service lives and should be considered for replacement.

Dishwasher: The dishwasher in the Kitchen is served by a condensate hood ducted to an exhaust fan on the roof. Like the grease hood, the condensate hood appears original to the facility and at the end of its published service life (10 -20 years for the hood and 15–20 years for the fan).

Dishwasher Recommendation: The hood and fan are at the end of their published service lives and should be considered for replacement.

Electric Range: There is an electric range located in the Life Skills room that is not served by an exhaust hood.

Electric Range Recommendation: An exhaust hood with tempered makeup air, complying with the requirements of NFPA 96 should be installed to provide exhaust ventilation for the appliance.



Clothes Dryer: In at least one location it was observed that a clothes dryer was vented through a lint trap into the space in which it was located.

Clothes Dryer Recommendation: These dryers should be vented to the building exterior.

VRF Systems: Mitsubishi VRF (variable refrigerant flow) ductless split heat pump systems have been recently installed (approximately 4-5 years ago for the second floor classrooms and 1 year ago for the first floor

classrooms) to provide cooling and first stage heating in all classrooms. The heat pump systems incorporate wall mounted interior units sized at 12,000 BTU/hr connected to exterior condensing units hung on the exterior wall adjacent to the classrooms for the first floor rooms and mounted on stands on the roof for the second floor classrooms. As configured, there are three to four interior units connected to each exterior unit, placing three to four classrooms with similar exposure on each system zone. The heat pumps are approximately three years old and are controlled from stand-alone controllers. The heat pump controls are not integrated with the central building automation system and are operated as standalone units. It is reported that, during seasons requiring mechanical cooling, the unit ventilators are de-energized to prevent "fighting" between the economizer cooling and mechanical cooling functions of the two systems. As such, during times when the heat pumps are calling, the ventilation for the classrooms is not operational.



VRF System Recommendation: Integration for the Daikin heat pump controllers to the building automation system should be considered. As such, the ventilation systems would be enabled to operate at all times when the facility is occupied and the building automation system will dictate whether first stage heating (heat pump), second stage heating (unit ventilator/fintube), economizer cooling, or mechanical cooling is required based upon space conditions, with appropriate dead bands between the heating and cooling setpoints to optimize operational effectiveness.

Other area Ventilators and Heat Pumps: Like the Classrooms, the small assembly areas which utilize ducted unit ventilators (Music Room, Art Room, Multi-Purpose (Function) Room, and OT/PT) each incorporate recently installed VRF ductless split heat pumps for mechanical cooling and first stage heating. The heat pumps include stand-alone controllers.

Recommendation: Integration for the Mitsubishi heat pump controllers to the building automation system should be considered. As such, the ventilation systems would be enabled to operate at all times when the facility is occupied and the building automation system will dictate whether first stage heating (heat pump), second stage heating (unit ventilator/fintube), economizer cooling, or mechanical cooling is required based upon space conditions, with appropriate dead bands between the heating and cooling setpoints to optimize operational effectiveness.



Library: The Library incorporates a package rooftop unit (RTU) to provide heating, ventilation, and mechanical cooling during the cooling season. This unit includes a duct mounted hot water heating coil, Dx cooling, and economizer cooling. It is reported that the unit is integrated to the existing building automation system within the facility and was installed to replace the existing ducted unit ventilator approximately 15 years ago.



Library Recommendation: Given the reported age of the RTU, it is nearing the end of its published service life (15-20 years). Consideration should be given to replacing this unit. The new unit should include demand control ventilation with energy recovery as required by current energy code based upon the volume of outdoor air.

Computer Room: The Computer Room on the second floor contains two split system cooling units to provide mechanical cooling. The units are manufactured by Mitsubishi and include ceiling cassette style evaporators with rooftop condensing units. Although they are not original to the facility, it appears that they are in excess of 15 years old, placing them near the end of their published service lives (15-20 year).

Computer Room Recommendation: Consider replacing the units with new split system heat pump units integrated with the facility's building automation system to provide space

conditioning in concert with the unit ventilator serving the space.

Main Office Heat: The main office area utilizes hot water fintube radiation for space heating and recently installed VRF heat pumps for mechanical cooling and first stage heating. The fintube is original to the facility while the heat pumps are approximately four years old. The heat pumps consist of wall mounted interior units at the Admin Area and Principal's Office connected to a single exterior unit mounted on the wall. The Conference Room, Nurse's Office, and Teacher's Room do not appear to incorporate mechanical cooling.



Main Office Heat Recommendation: Integration for the Mitsubishi heat pump controllers to the building automation system should be considered. As such, the ventilation systems would be enabled to operate at all times when the facility is occupied and the building automation system will dictate whether first stage heating (heat pump), second stage heating (unit ventilator/fintube), economizer cooling, or mechanical cooling is required based upon space conditions, with appropriate dead bands between the heating and cooling setpoints to optimize operational effectiveness.

Unit heaters, Fin-tube, & Cabinet unit heaters: There are strips of fin-tube heaters, unit heaters, and cabinet unit heaters that heat exterior spaces, and egress paths such as corridors, stairways, locker rooms, and exterior bathrooms. All such equipment is original to the facility and nearing the end of their service life (20-25 years).



Recommendation**:** Replace the terminal heating equipment to maintain supplemental heating as required.

Building Automation System (BAS): the BAS within the facility is a Siemens electronic direct digital control (DDC) system. The system was installed during the original facility construction and has been recently upgraded to the new

Desigo software. Much of the hardware associated with the system was replaced with the unit ventilator replacement one year ago. It is reported that sub-panels associated with the system are upgraded on an annual basis to ensure that the latest software and controllers are in place.

BAS Recommendation: Continue to maintain the system in place. As equipment is replaced, the controllers and hardware associated with the equipment should be replaced and integrated with the DDC BAS. As outlined above, consideration should be given to replacement integration for the heat pump controllers to the BAS.



Plumbing

Water Entrance: There is a 6" cold-water line entering the building from the municipal service. The water line comes into the building at the Boiler Room where it serves both the automatic sprinkler system and the domestic water service. The domestic water service is sized at 2" and incorporates both a city water meter and a reduced pressure zone backflow prevention device. The service is original to the facility.

Domestic Hot Water: Domestic hot water is provided by a storage type, natural gas fired, condensing water heater located in the boiler room. The heater is manufactured by AO Smith and has a storage capacity of 100 gallons with an input rating of 199,000 BTU/hr. The unit was recently replaced (within the last year). Water is stored at 120 degrees for distribution throughout the facility. A digital master mixing valve, also located in the boiler room provides control for the hot water temperature in accordance with ASSE 1017 requirements. There is currently no independent loop to serve the kitchen area. By code, sinks used for food prep and cleanup are required to utilize 140 degree water or a means for chemical sanitation.

Domestic Hot Water Recommendation:
Consider increasing the temperature at the

water heater to 140 degrees and add a second mixing valve and domestic water loop to serve the kitchen area. The existing mixing valve will continue to provide 120 degree water to the remaining areas of the facility.

Piping: Domestic hot and cold water piping that was visible is primarily copper with soldered fittings. Piping appears to be well insulated throughout.

Piping Recommendation: No action required.

Sanitary Waste: The sanitary waste, based upon a review of the original drawings, exits the facility as a 6" service at the northeast Kindergarten Room. The sanitary waste is directed to a municipal service. Domestic waste and vent piping was not specifically accessed for observation during the assessment, but it is reported to be primarily constructed of cast iron and no issues with drainage were reported.

Sanitary Waste Recommendation: No action required.

Grease Trap: Grease waste exits the facility as a 3" service from the kitchen area. The grease waste is routed to an on site, 1,000 gallon grease trap based upon a review of the original drawings. It is reported that the grease trap is routinely cleaned/serviced with no issues reported.
Grease Trap Recommendation: No action required.

Plumbing fixtures: Water closets are manual flush valve type, with a combination of both floor mounted and wall mounted units, all of vitreous china construction. Urinals are wall mounted white vitreous china with manual flush valves. Lavatories are wall mounted white vitreous china units with primarily single handle manual faucets. There are several lavatories that have exposed traps below them, and have no ADA trim kits over the exposed piping. Classroom sinks are stainless steel drop in units with two handle gooseneck faucets and separate







bubblers. Modern drinking fountains with bottle fillers have been installed, and were in good working order. In general, the plumbing fixtures were well maintained and operational, however they appear, for the most part to be original to the facility placing them at the end of their published service lives (20-40 years).



Plumbing Fixture Recommendations: Consider replacing the fixtures and trim in the near future as they are at the end of their published service lives. All exposed piping should be covered as required by Maine plumbing code to meet ADA requirements.

Rain water: Based upon a review of the original drawings, roof drains carrying rain water exit the facility as a 10" service at the northeast kindergarten room. There are no deficiencies reported with this system.

Rain water Recommendation: No action required.

Natural Gas: Natural gas enters the facility near the Kitchen and serves kitchen cooking equipment, the boilers, and the domestic water heater. The piping is constructed of schedule 40 steel with screwed fittings. The entrance contains a meter and main pressure regulator at the exterior of the building, supplied by the municipal service.

Natural Gas Recommendation: No action required.

Fire Protection

Sprinkler System: The school incorporates automatic sprinkler protection throughout. The system is fed by a 4" riser located in the storage room adjacent to the boiler room. It appears that a backflow prevention check valve is installed at the riser.

Sprinkler System Recommendation: No action required.

Electrical Systems Narrative

- The three-phase power distribution system equipment serving the building appears to be older but functional with some room for expansion on many of the sub-panels.
- The lighting fixtures for the building were recently upgraded to LED models approximately 4 years ago but dimmable switches in the classrooms were not included in the upgrade. The principle said that installing dimmable switches in the classrooms would be very helpful to the teachers for many of the presentations they provide their students.
- Emergency egress and exit light fixtures appear to be adequate and have an appropriate layout. It is recommended that a "pull the plug test" be performed to ensure all units are functioning properly, emergency lighting units are aimed appropriately to illuminate the intended egress paths, and to ensure 1.5 hours of battery life is available.
- A photometric test should be performed on the exterior lighting to verify adequacy for security camera coverage. The number and placement of all of the building's security cameras, both interior and exterior, needs to be evaluated for meeting the security needs of the facility.

Electrical Systems Distribution

The main distribution panel (MDP) is a 1988 Siemens I-T-E switchboard with a 1000 Amp bus rated, three-phase, 4 wire, 208Y/120 V service powered by an underground feeder routed from the secondary side of a 150 kVA three phase 12.47 kV / 208/120 V pad-mounted transformer. The MDP is protected by a 1000 A main service disconnect circuit breaker. Historical peak load demand from the

Main Distribution Panel Circuit Breakers

past 12 months for the building was recorded by CMP to be 65 kVA. There is no surge protector installed for the MDP making everything powered by the building vulnerable to lighting strikes. The MDP supplies sub-panels A, A1, B, B1, C, D, K, the elevator, and the storage room E panel, all of which are three phase 208/120V panels.

Since the MDP is 36 years old, it is worth noting that Siemens claims that the intended service life for their electrical distribution switchboards is only 30 years, noting that with age, the equipment will become less reliable and more prone to failure while at the same time, because the unit has been out of production for more than 30 years, the prospect of finding repair parts will become increasingly remote. Despite its age, the MDP appears to be in good condition with many of the sub-panels having plenty of spare breakers should any requirements for new electrical loads arise.



Pad Mount Transformer

Interior Lighting and Controls

The facility underwent a major re-fit in approximately 2020 in which all of its lighting fixtures were replaced with LED models. Lighting controls throughout the facility are standard on-off switches with occupancy sensors for the hallways and office areas (not in the classrooms). The principle expressed that there is a desire to have LED dimmer switches installed in the classrooms to aid in presentations.

Exterior Lighting and Controls

Eight exterior lighting fixtures were observed around the building and three lighting poles were observed in the parking lot. The custodial staff believe all of the exterior lights are timer operated and don't really have any knowledge over whether the lighting coverage is adequate noting that nearly everyone who works at the school's day ends before 5 PM.

Security for the facility could be improved by performing a lighting photometric survey to ensure adequate lighting is supplied around the parameter of the building so that exterior cameras can capture what is happening around the building at night.



Emergency Stand-by Power System

No emergency or stand-by power system is installed at the facility. If it is desired and funded, we would need to meet with the building ownership and facility management to determine what loads would be required to have emergency standby power (i.e. just essential loads such as life safety and freeze protection, or for just certain shops, or even whole building) and whether installing an emergency power system is justified from a cost vs reliability gain perspective.

Emergency Lighting System

Installed EXIT signs appear to all be NFPA 101.9 size and location conformant. This building's emergency exit lighting is powered through four central battery packs that each supply individual strings of emergency lights. The custodial staff stated that they test the emergency lighting operation monthly but do not verify whether it has 1.5 hours of battery life. It is recommended that both the EXIT signs and emergency lighting be tested IAW with the guidelines of NFPA 101 7.9.3 to ensure they are NFPA 101.7.9.1.3 and 101.7.10.4 compliant.

Emergency Lighting Battery Pack



Fire Alarm Annunciator

Fire Alarm System

The Fire Alarm Panel notifies a private 3rd party (Maine Fire Protection Systems) who then notifies the fire department in the event of an alarm. The fire alarm panel was installed in 2019 and has received regular maintenance throughout its life. The building does have a sprinkler system and its smoke

detector coverage appears adequate throughout and it does have a fire department key box (Knox) installed by its main entrance.

Lighting Protection System

The facility does not have a lightning protection system. The owner has not requested or budgeted to have one installed and an NFPA 780 Annex L Lighting Risk Assessment has not been performed for the facility.

Data/Telephone/Classroom Intercom/Clock Systems

The main WIFI hub and the local Network Servers for the facility is equipped with a battery backup UPS, however, the building staff who accompanied my tour had no knowledge of the adequacy of the UPS or whether it has been tested.

The building utilizes a modern Valcom announcing system that allows the front office to make building wide announcements as well as to make announcements that are addressable to individual classrooms but the system is one-way only meaning the front office can talk to the classrooms but the classrooms cannot speak back.



Security

Access Control Systems

The only door to the building with electronic access control is the front main entrance that has a card reader. A buzzing unit is installed to alert the receptionist of visitors and grant them access via an unlock button located at the front reception desk. The building does have a fire department key box (Knox) located near the main entrance.

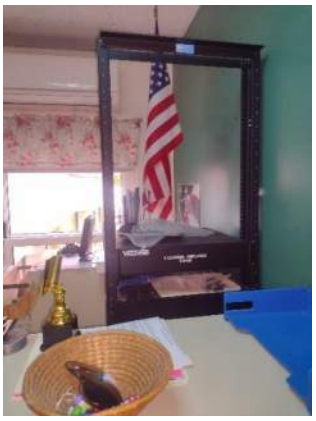
CCTV Systems

Security cameras are installed in most of the building hallways and building entrances. The cameras use a wireless interface to connect with the building server and their video can be accessed through private security company account, which the receptionist and facility management have access to. Facility management has expressed concern about the current placement of the interior camera coverage and would like it to be re-evaluated.

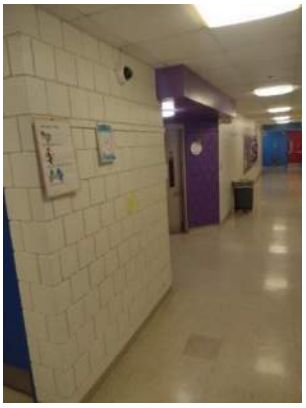
Intrusion Detection Systems

The facility has motion detectors for each of the exterior doors of the building that feed a central security panel that is integrated with the fire alarm panel. The security alarm system for these doors is activated at the end of work-day by a control panel near the reception desk. Notification of any triggered security alarm is sent to a 3rd party (Maine Fire Protection Systems) who then notifies facility management and the police as required.

Valcom Announcing System Amplifier



Hallway Camera



Intrusion Detection System Alarm Panel



2.4 Farrington Elementary School – Architectural Observations

Farrington Elementary School was built in 1988 and sits on a 17-acre site on the east side of the river.

Farrington Elementary School was built at the same time as Lincoln Elementary School, using the same construction methods and similar design elements. It is a non-combustible steel frame building with concrete floor slaps and steel deco on the upper levels. The exterior is exclusively brick and masonry veneer construction that is in good condition.

Entry Vestibule A small entry vestibule is roughly 13' x 7'. A communicating window between the vestibule and the office is not used due to mechanical equipment in the office blocking staff access to the window. Administrative staff uses a camera to see who is requesting access through the interior vestibule doors which are otherwise kept locked.	
Administration: A second communicating window between the entry hallway and the office, inside the secured perimeter, is used by visitors. The existing conference room is too small to hold a typical six-person meeting or larger, and the only bathroom in the suite is accessed through the conference room. An additional meeting space has been turned into record storage. Staff report poor heat distribution within the space and inadequate ventilation.	  

Typical Classroom:

Classrooms average between 680 sf and 720 sf with some corner classrooms larger than average.

Classroom entry doors are recessed off the corridors often in groupings of two or three doors. Immediately inside each recessed entry is a niche with built in cubbies against the corridor wall, a +/- 3' open area and a set of storage including a sink with a base cabinet. Each niche fits under a dropped soffit ceiling. At the end of each niche is a small toilet room. This cubby space is where students wait during lockdowns since the niche is not visible from the window at the doorway. Neither the sink nor the toilet meets ADA requirements.

5th and 6th grade students often opt to use hallway bathrooms rather than ones in classroom for added privacy. All classrooms have ample natural light; ceiling lights are often covered to lessen brightness – the controls do not include dimmers.









Functional Life Skills, K-2 (First Floor):

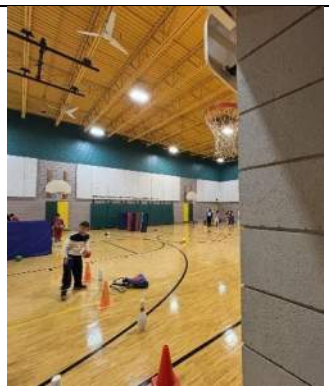
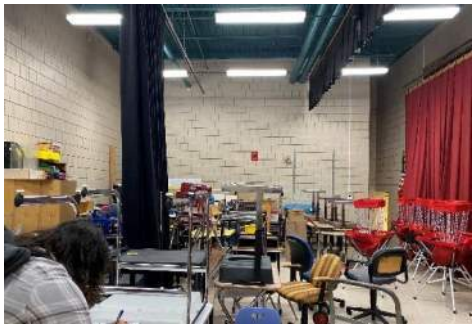
The building was designed with two Life Skills classrooms, based on age groups. Due to the current sizes of each group, the younger students are in a room originally intended for older kids, which includes a partial kitchen that they do not use.

This ground level room has direct access to an exterior courtyard providing relief for students who need quick access to outside areas. Staff here appreciate the immediate proximity to the nurse's office including a large, shared bathroom.





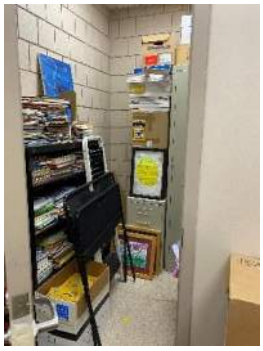
Functional Life Skills, 3-6 (First Floor): Originally designed for younger students, this classroom has a tiny bathroom which does not allow for privacy when students need assistance with bathroom functions. The sink is outside of the toilet room. An interior calming space was created in the space between fixed casework and the corridor wall. Padding has been added to walls and a curtain can be pulled across the area for privacy.	 
Music Room: Farrington is the only elementary school in Augusta with a dedicated music room although they share a music teacher with Hussey. Teachers report the room is well sized for classes and has ample storage since turning an unused practice room into a storage room. New acoustic paneling on walls helps control noise within and leaking out of the room. Air conditioning through heat pumps was added recently. This room has a door directly to the outside. Farrington shares a music teacher with Hussey.	

Gymnasium The gym is well sized and loved by the PE teacher who also teaches at Hussey. There is ample storage accessible from the gym. Immediately off the space is a room used for high use equipment and as an office. The PE teacher appreciates the hooks and shelves for his equipment. There is also a two-story area known as “community storage” with tables and chairs stored on the ground level and extra school supplies and surplus winter clothing is store upstairs.	 
Gym Bathrooms and Locker Rooms: These multi-user bathrooms, one each for boys and girls, serve the entire Cafeteria/Music/Gym wing of the building. Locker rooms with showers, one off each bathroom, are used entirely for storage – either janitorial supplies or clothing for students.	
Stage: The stage is used primarily for PE storage. The rear curtain is useful for covering stored items when performances take place. The stage is accessed from the gym by stairs only; level access to the stage is from the adjacent hallway ramp. The school would like to have access to the gym from the music room which is behind it.	

Art Room (Second Floor):

Farrington is the only elementary school in Augusta with a dedicated art room although they share an art teacher with Hussey Located on the second floor, the room only has windows into an interior corridor. A former kiln rom has been converted to an art storage room.





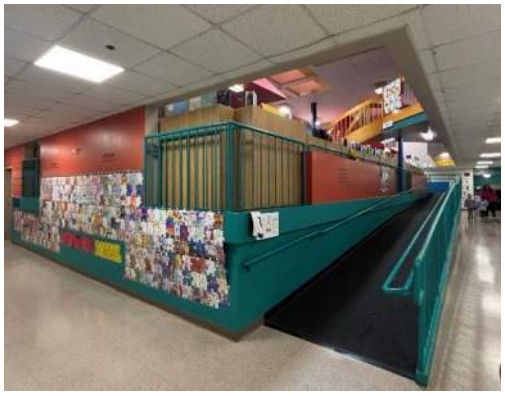
Library:

The library is located on a mezzanine level between the first and second floor. A large ramp off of a lower-level corridor provides ADA access to the space and also means that the library is largely open to the surrounding hallways. This results in carried noise and much distraction during library located class time. Some attempts have been made to close up the open areas but not enough to substantially improve the travelling sounds.

The library can also be accessed by two sets of stairs, one on each side of the building.

Students enjoy the playful design of the space. An interior spiral stair to the second floor is a tempting attraction to students and a constant safety concern for staff. The library is used for GT programming once a week and for Physical Therapy once a week.





Cafeteria

The cafeteria currently hosts four lunch periods (30 minutes each). Because the room is bisected by the only indoor route to the music room and gym, there is a lot of traffic through the cafeteria, including during lunch times. While the large areas of CMU walls provide opportunities to display student artwork, they also result in a loud space.

Tables are always kept out and students in wheelchairs are placed at short ends of tables.

A set of double doors on the north side of the cafeteria is now the location of drop off for and waiting for pick up for students. This practice began during Covid when there was a need to space out arriving and departing students and continues now to help separate parent cars from bus traffic.







Kitchen

The kitchen size works well due to the ability to move tables and workspaces internally as needed. There is a dedicated dish area, small interior office, and cold storage and a walk-in freezer all accessible from a hallway between the kitchen and an exterior door.

A stacked washer/dryer does not vent outside of the building. Staff are unhappy about the lack of air conditioning in the space.





Nurses Office:

The nurse's office is off the main corridor close to the building entry. It is staffed by both a nurse and a CNA. There is a generous but not ADA compliant single user bathroom and a changing area, both in between and shared by the K-2 FLS room. The Bathroom is a necessity, and the nurses would like to have an additional sink.





Dean's Office and Calming Space:

The dean's office is created from an originally designed resource room. It is accessed from the administrative suite corridor and also has a door directly outside. The room sometimes serves as a small group instruction room.

An interior calming room was created out of a portion of this office and is accessed through the Dean's office. There is a one-way mirror between the two rooms (window view from Dean's side). The calming room is highly valued by staff but the location inside another room can be challenging.





Support Spaces:

Multiple interior rooms are used for special education and support purposes.





ESOL

Farrington has three dedicated ESOL rooms for roughly 71 students. All three are on the second floor and include one full classroom and former classroom split into two rooms with a large storage closet.







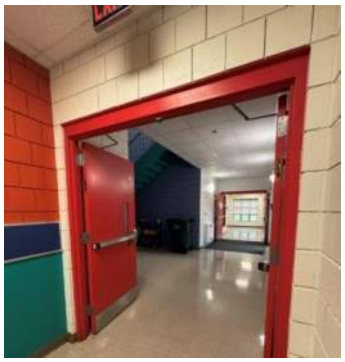
Stairs and Elevator

The elevator, while adjacent to the library, only stops on the first and second floors.

There are two fire stairs in the classroom wing one on each side of the center library. Both stairs have a door to the library on their midflight landings.

While the stair construction appears code compliant, neither set of stairs is immediately enclosed by a set of fire doors. Instead, each stair opens into a hallway on both floors and there are two sets of fire doors, one roughly 10’ on each side of the stairs on each floor. The fire doors open toward the stairs and are held open on magnetic devices.

Open areas under the stairs are used for storage which is against life safety code.






Corridors

Corridor walls are CMU. Classroom entry doors are grouped together in niches recessed off the corridors. A load bearing column is present in the corner entry groupings. Some classrooms use these niches for additional storage.

On the second floor, two interior corners are recessed to create seating niches. The principal would like to turn more of the entry niches into pull out or student use spaces, rather than being for storage.

The Northeast corner of the building was designed for a future classroom addition. Currently, the corridors in this area have large windows with expansive views of the adjacent woods.





Exterior:

The exterior veneer is primarily brick with some split face and glazed masonry and masonry bands on either CMU or stud wall backup. Brick predominates on the front and sides of the building; masonry is on the rear facades with occasional inset decorative tile.

The two primary types of wall construction are EW1: masonry veneer, air space, 2" insulation, CMU backup and EW2: masonry veneer, air space, 6" steel stud with batt insulation. It is unknown whether the CMU walls (exterior and interior) have grouted cores or vertical steel reinforcement.

The (plan) northeast corner of the building was originally designated as the location for an expansion and is clad with vinyl clapboards.

Materials appear in good condition with some evidence of water infiltration is visible at concrete foundation walls and below windows. 27 Hollow metal entry doors are in good shape with little to no rust. The hollow metal windows are in good shape.

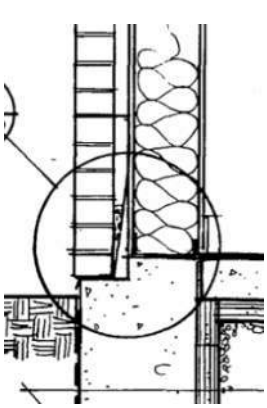
Flat roofs appear to have 5" of rigid insulation and were re-roofed in 2020.

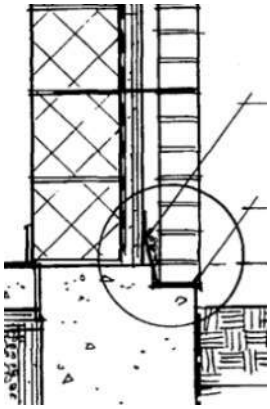












2.4.1 Farrington Elementary School – Structural Observations and Recommendations

Farrington School structure is in very good condition. The facility has been well maintained. Selected areas of the existing framing were reviewed as part of this study relative to current code floor and roof snow load requirements. Based on that review, it appears that the existing framing complies with current code provisions with the possible exception of some of the existing CMU walls. It is not known if any of the existing CMU walls have any vertical reinforcing steel rebars in grouted CMU cores.

Farrington School roofing is in very good condition. Additional review is required as noted here based on specific code edition that might be in force at time any future re-roofing activities are performed including required roofing insulation thickness and structural upgrade requirements.

General

Applicable Building Code – 2015

American Society Of Civil Engineering Minimum Design Loads For Buildings And Other Structures – 2010

Farrington School was constructed in 1988 +/-. Architectural design was by Portland Design Team (PDT) from Portland, Maine. Structural design was by Chapin Associates from Norwood, Massachusetts. Architectural and structural drawings were made available for this study. Observations here are based on those drawing materials, and observations made/discussions during site visit to the school in September 2024. Observations were limited to items that were visible during the site visit. No destructive testing was performed to expose hidden structural items. Data here is very similar to that for Lincoln School as both buildings were constructed at same time with same design teams.

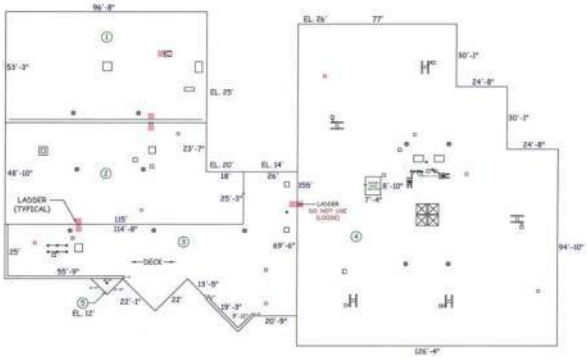
Roofing

Farrington School currently has 0.60” EPDM roofing membrane. The EPDM roofing is in very good condition. It was reported that the entire building was re-roofed in 2019 and 2020 and that original stone ballast was removed and additional ½” layer of insulation added at that time over original insulation levels. Based on data supplied from G & E Roofing the two-story Classroom Wing of the existing building has a total of 4.7” insulation

Google Maps



Key Roof Plan



(2 original layers of 2.1" Iso with additional ½" layer of Isogard HD from 2019/2020 re-roofing) and the remaining roof areas have a total of 5" insulation (original 3" and 1-1/2" Iso layers with additional ½" layer of Isogard HD from 2019/2020 re-roofing.

The current 2018 Bureau of General Services (BGS) reroofing and structure upgrade guidelines currently require that all roofs be evaluated for IBC 2015 design loading requirements and the application of an R-30 minimum roof insulation. This is what has been used for this study to review existing framing components.

By the time any design work is done on this building it is possible that the state of Maine will have adopted the IBC 2021 building code. Observations made here should be reviewed for buildings code in force at time any modifications are made here.

- Per 2021 IBC requirements a minimum aged insulation thickness of 5.5" is likely required to meet R-30 insulation requirement. If need to meet the 2021 IBC requirements at time any work is performed likely additional 0.8" +/- insulation or cover board may be required at Gym roof, and additional ½" +/- insulation or cover board may be required on all other roof surfaces here.
- The original stone ballast was resisting code-specified wind uplift load requirements, both on roofing materials and roof structure. It is not known how well roofing materials were fastened down for recent re-roofing activities. When next re-roofing work is performed, it is recommended to review fastening of roofing materials to substrate layers to verify uplift loads can be resisted without weight of stone ballast. Roof joists typically have steel bridging lines designed to resist code-specified loads from wind uplift. When next re-roofing work is performed, it is recommended

Exterior Elevation



Roofing Surface



that uplift bridging on existing roof joists be reviewed to verify can support wind uplift loads. It may be possible to resist uplift loads by adding new layer(s) of cover board below the EPDM roofing in lieu of upgrading/adding uplift bridging to the existing roof joists.



Structure

Farrington School consists of a two-story Classroom Wing, and a variable height one-story wing with Gym, Cafeteria, Stage and Administrative (GCSA) spaces.

Foundations/Slabs:

Foundations/slabs consist of perimeter frost and interior concrete support walls, and concrete slabs-on-grade. No concerns were identified in the slabs-on-grade or with the exposed elements of the building foundation system. Any minor foundation cracks observed should be watched and should be sealed to prevent water intrusion and/or freeze thaw damage.



Second-Floor Framing:

The second-floor framing in the GCSA Wing consists of a 3" +/- concrete slab on metal deck supported by open-web steel joists that bear on steel beam/column lines. The existing floor framing appears to be as shown on the existing structural drawings. The floor framing was observed at a number of locations and no signs of damage, distress or overload were observed in the floor framing.

Roof Framing:

General:

Farrington School has a series of flat roof areas. No slope roofs. The Classroom Wing addition is all at one level. The GCSA Wing has three different flat roof levels. The existing structural drawings indicate tighter roof joist spacings near all roof step areas in GCSA Wing. This tighter spacing is due to fact that the building codes require that roof framing on the low roof side of any roof steps

be designed for increased snow loads from blowing snow that may drift up to these roof steps and collect in greater depths/load levels than at areas of the roof away from the roof steps. Drifting roof snow load provisions were introduced in building codes in the mid-1970's, about 15 years before the design of Farrington School so the expectation here is that the Farrington School roof framing would have been designed for snow drift loadings.

Classroom Wing:
The Classroom Wing is steel-framed with steel roof and floor joists and steel beam/column support lines with a 1-1/2" deep Type B metal decking surface. The existing roof framing appears to be as shown on the existing structural drawings. The roof framing was observed at a number of locations and no signs of damage, distress or overload were observed in the roof framing. There was no evidence that framing upgrades or reinforcements have been made since the original building construction.

Code Review

Second-Floor Framing:
The existing structural drawings show the loads levels that existing floor framing in Classroom Wing was designed floor including 40 pounds per square foot (psf) Live Load in classroom spaces, and 100 psf Live Load for public spaces. The required floor load levels from current code compare well to those required from original construction. As part of this study some floor joists were reviewed to confirm load carrying capacity meets these load requirements. Based on that review it appears that the existing floor framing does meet current code floor load requirements.

Roof Framing:

General:

Gym Framing



Cafeteria



The existing structural drawings show that the existing roof framing was designed for a 70psf Ground Snow load plus the dead load of the roof framing and roofing components including the original stone roof ballast. It is reported that the stone ballast was removed during recent re-roofing activities. Stone ballast typically weighs approximately 12psf. The removal of the stone ballast has added new capacity for the existing roof framing to resist code specified roof snow loads. The building code in force at the time of the original building construction in 1988 was likely the 1986 BOCA Building Code. The 1986 BOCA Building Code contained provisions for snow drifting including snow drifting on low roofs at roof steps that were likely used to design low roof framing at roof step conditions. As part of this study selected roof framing away from, and at roof steps, were reviewed for current code snow load requirements, including snow drift loads.

<u>Classroom Wing:</u>
The Classroom Wing has a single flat roof level so there are no snow drift considerations for the Classroom Wing. The roof framing at selected areas of the roof were reviewed as part of this study for the uniform (non-snow drift) roof snow loads required from building code provisions. Based on this review it appears that the existing roof framing does meet current code snow load requirements.

<u>GCSA Wing:</u>
The GCSA Wing has three levels of flat roof so has roof snow drift loads at three roof step locations. The roof framing at these three drift areas, and at selected framing areas away from drift zones, were reviewed as part of this study. Based on this review it appears that the existing roof framing does meet current code snow load requirements including snow drift requirements.

Roof's



CMU Walls: The GCSA Wing has CMU bearing walls supporting roof framing. The CMU walls on building perimeter, such as those on the outside walls of the Gym and Administrative spaces, are subject to code-specified lateral wind and seismic loads acting perpendicular to the CMU wall surfaces. The existing CMU walls must be capable of supporting any applied gravity loads from joist bearings in addition to the lateral loads from the applicable building code. The existing structural drawings indicate 12" CMU at tall outside walls such as at the Gym spaces, and 8" CMU at shorter outside walls such as at Administration spaces. There is no indication on any of the existing architectural or structural drawings if there is any vertical steel rebar reinforcing in grouted cores in any of the existing CMU walls. It is often the case that vertical reinforcing in grouted CMU cores is used to provide necessary load capacity for CMU walls. The presence, or absence, of vertical reinforcing in grouted cores in the CMU walls must be established before these CMU walls can be reviewed against current code requirements. Our recommendation here is that selected existing CMU walls such as the tall outside wall of the Gym and the shorter outside wall of the Administrative area be scanned/explored for the presence of existing vertical reinforcing to inform further work to determine if the existing CMU walls meet current code requirements.	

Recommendations:

Selected existing CMU walls such as the tall outside wall of the Gym, and the shorter outside wall of the Administrative area, should be scanned/explored for the presence of existing vertical reinforcing to determine if the existing CMU walls are reinforced and if meet current code requirements.

Review potential removal of exterior CMU walls and interior CMU walls for impact to the existing building lateral resisting system.

Review degree/level of planned renovation and Code threshold for upgrade of existing building structural systems to present Code requirements.

Additions should be laterally (wind and seismic) independent of existing construction.

Recommend to confirm presence of uplift bridging on existing roof joists and existing capacity to support Code required wind uplift loads.

Final observations and recommendations should be reviewed for the actual buildings code in force at time any modifications are made.

2.4.2 Farrington Elementary School – Mechanical, Plumbing and Electrical Observations and Recommendations

Farrington Elementary School was constructed in 1988 and comprises approximately 48,000 square feet. Below is an assessment of the school's mechanical, plumbing, fire protection, and electrical systems in their current conditions.



Mechanical/HVAC

Boiler: The building is served by two natural gas fired Viessmann Vitocrossal CM2 condensing boilers sized at 663 MBH each. The boilers were installed in approximately 2013 and are in good operational condition, well within their dependable service lives (20-25 years). The boilers exhaust to the existing masonry stack via CPVC vents. Combustion air for the boilers is pulled from the boiler room and not ducted to the exterior. It is reported that the motorized damper at the exterior wall mounted louver is interlocked with burner operation such that the MOD opens when the boiler is firing.

Boiler Recommendation: Although no immediate action is warranted for the boilers as they are in good operating condition and within their published service lives, it should be verified that combustion air meets the requirements of NFPA 31 and the boiler manufacturer based upon the space volume. Per NFPA 31 definition, the boiler room is

considered a confined space based upon the fact that the overall space volume is less than 50 cf per 1,000 BTU of boiler capacity. As such, combustion air is required to be introduced to the space from the exterior via high and low openings in the wall that provide 1 square inch of free area per 4,000 BTU of firing rate. In this case, a louver free area of 332 square inches or 2.3 sf would be required. At 50% free area, that equates to approximately 36” x 18”, high and low.



Heating Hot Water Distribution: Two Grundfos variable speed hot water circulator pumps circulate hot water through the facility to terminal units for heating. The hot water distribution system is comprised of schedule 40 steel for the larger mains and copper for the branch piping. Piping appears well insulated throughout.

Heating Hot Water Recommendation: No immediate action is warranted. Pumps are in good operating condition and within their published service lives (10-15 years).



Classroom Ventilation: Classrooms are each served by a wall mounted unit ventilator which provides heat, ventilation, and economizer cooling throughout the classroom areas. Each unit ventilator incorporates a two way hot water control valve and a through wall ventilation sleeve connected to a sidewall louver for ventilation intake. Each classroom contains a low relief grille ducted to a pressure relief vent through the sidewall to relieve the ventilation air. The unit ventilators were replaced throughout approximately one year ago and are in excellent operating condition. The units incorporate recently bi-polar ionization devices to help mitigate the spread of airborne viruses.

Classroom Ventilation Recommendation: No immediate action is warranted. Unit ventilators are essentially new. Although equipment submittals for these units was not available for review during the assessment, it is assumed that minimum ventilation rates for each unit

were set to meet current guidelines for acceptable indoor air quality as established by ASHRAE 62.1-2016.

Assembly Space Ventilation: The Gymnasium, Cafeteria, and Library are each served by a central, heating only air handling unit located in mechanical spaces adjacent to each area. The air handling units each incorporate a hot water heating coil, mixing box the introduce fresh air, economizer cooling, and CO2 demand controlled ventilation based upon space occupancy. Additionally, the air handlers have each been upgraded to include bi-polar ionization devices within the mixing boxes to help mitigate the spread of airborne viruses. The air handling units are original to the facility, which places them at the end of their published service lives (25-30 years).

Assembly Space Ventilation Recommendation: Air handling systems are at the end of their published service lives. Although they appear to be operationally sound currently and incorporate demand control ventilation to maintain acceptable indoor air quality, replacement should be considered. In replacing the units, energy recovery should be included as required by the current energy standard for times when occupancy within the spaces served dictates large percentage of outdoor air. Replacement units should consider the addition of mechanical cooling to improve occupant comfort during the shoulder seasons.

Other Ventilation: The Art Room, Music Room, Multi-Purpose Room, and Guidance area are each served by ducted unit ventilators which contain a hot water heating coil and a mixing box with economizer cooling for fresh air introduction. The fresh air is introduced through either sidewall louvers or rooftop gravity intake ventilators. The ducted unit ventilators, like the classroom units were replaced in their entirety approximately one year ago. Like the other air handling systems, they each incorporate bi-polar ionization devices.





Other Ventilation Recommendation: No action is required. Unit ventilators are essentially new. As with the classroom units, it is assumed that minimum ventilation rates for each unit were set to meet current guidelines for acceptable indoor air quality as established by ASHRAE 62.1-2016.

Admin Ventilation: The Administrative area does not appear to contain a system of ventilation with the exception of an exhaust fan which serves the restroom and copier.

Admin Ventilation Recommendation: Furnish and install an energy recovery ventilator (ERV) to provide exhaust air for restroom and copier while bringing in fresh air to ventilate the occupied spaces throughout the area. The ERV will incorporate a duct mounted heating coil to temper the fresh air during the heating season.



General Exhaust: There are roof mounted exhaust fans used for exhaust in bathrooms and storage rooms throughout the school. The fans are operational but appear to be original to the facility and at the end of their published service lives (20-25 years).

General Exhaust Recommendation: The fans are at the end of their published service lives and should be considered for replacement.



Grease Hood: There is a grease hood serving the kitchen cooking appliances, with grease baffles. The hood is equipped with an Ansul system and appears to be in good working order. The associated exhaust fan is on the roof above and also appears in good working order. The hood and fan appear to comply with NFPA 96 requirements. Make-up air for the hood is transferred in from the adjacent Cafeteria area. Although in overall good working order, the system appears original to the facility and at the end of its published service life (10 -20 years for the hood and 15–20 years for the fan).

Grease Hood Recommendation: The hood and fan are at the end of their published service lives and should be considered for replacement.

Dishwasher: The dishwasher in the Kitchen is served by a condensate hood ducted to an exhaust fan on the roof. Like the grease hood, the condensate hood appears original to the facility and at the end of its published service life (10 -20 years for the hood and 15–20 years for the fan).

Dishwasher Recommendation: The hood and fan are at the end of their published service lives and should be considered for replacement.

Electric Range: There is an electric range located in the Life Skills room that is not served by an exhaust hood.

Electric Range Recommendation: An exhaust hood with tempered makeup air, complying with the requirements of NFPA 96 should be installed to provide exhaust ventilation for the appliance.

Clothes Dryer: In at least one location it was observed that a clothes dryer was vented through a lint trap into the space in which it was located.

Clothes Dryer Recommendation: These dryers should be vented to the building exterior.

VRF Systems: Daikin VRF (variable refrigerant flow) ductless split heat pump systems have been recently installed (approximately 4-5 years ago for the second floor classrooms and 1 year ago for the first floor classrooms) to provide cooling and first stage heating in all classrooms. Given a published service life of 15-20 years, these heat pumps are well within their anticipated dependable lives. The heat pump systems incorporate wall mounted interior units sized at 12,000 BTU/hr connected to exterior condensing units hung on the exterior wall





adjacent to the classrooms for the first floor rooms and mounted on stands on the roof for the second floor classrooms. As configured, there are three to four interior units connected to each exterior unit, placing three to four classrooms with similar exposure on each system zone. The heat pumps are approximately three years old and are controlled from stand-alone controllers within each functional space. The heat pump controls are not integrated with the central building automation system and are operated as standalone units. It is reported that, during seasons requiring mechanical cooling, the unit ventilators are de-energized to prevent "fighting" between the economizer cooling and mechanical cooling functions of the two systems. As such, during times when the heat pumps are calling, the ventilation for the classrooms is not operational.



VRF System Recommendation: Integration for the Daikin heat pump controllers to the building automation system should be considered. As such, the ventilation systems would be enabled to operate at all times when the facility is occupied and the building automation system will dictate whether first stage heating (heat pump), second stage heating (unit ventilator/fintube), economizer cooling, or mechanical cooling is required based upon space conditions, with appropriate dead bands between the heating and cooling setpoints to optimize operational effectiveness.

Other Ventilation and Heat Pumps: Like the Classrooms, the small assembly areas which utilize ducted unit ventilators (Music Room, Art Room, Multi-Purpose Room, and Guidance suite) each incorporate recently installed VRF ductless split heat pumps for mechanical cooling and first stage heating. The heat pumps include stand-alone controllers.

Other Ventilation and Heat Pump Recommendation: Integration for the Daikin heat pump controllers to the building automation system should be considered. As

such, the ventilation systems would be enabled to operate at all times when the facility is occupied and the building automation system will dictate whether first stage heating (heat pump), second stage heating unit ventilator/fintube), economizer cooling, or mechanical cooling is required based upon space conditions, with appropriate dead bands between the heating and cooling setpoints to optimize operational effectiveness.

Main Office Heat: The main office area utilizes hot water fintube radiation for space heating and recently installed VRF heat pumps for mechanical cooling and first stage heating. The fintube is original to the facility while the heat pumps are approximately one year old. The heat pumps consist of ceiling cassette style interior units at the Admin Area, Offices, and Conference Room connected to a single exterior unit mounted on the wall.

Main Office Heat Recommendation: Integration for the Daikin heat pump controllers to the building automation system should be considered. As such, the ventilation systems would be enabled to operate at all times when the facility is occupied and the building automation system will dictate whether first stage heating (heat pump), second stage heating (unit ventilator/fintube), economizer cooling, or mechanical cooling is required based upon space conditions, with appropriate dead bands between the heating and cooling setpoints to prevent equipment “fighting”.

Unit heaters, Fin-tube, & Cabinet unit heaters: There are strips of fin-tube heaters, unit heaters, and cabinet unit heaters that heat exterior spaces, and egress paths such as corridors, stairways, locker rooms, and exterior bathrooms. All such equipment is original to the facility and nearing the end of their service life (20-25 years).

Heater Recommendation: Replace the terminal heating equipment to maintain supplemental heating as required.





Building Automation System (BAS): the BAS within the facility is a Siemens electronic direct digital control (DDC) system. The system was installed during the original facility construction and has been recently upgraded to the new Desigo software. Much of the hardware associated with the system was replaced with the unit ventilator replacement one year ago. It is reported that sub-panels associated with the system are upgraded on an annual basis to ensure that the latest software and controllers are in place.

BAS Recommendation: Continue to maintain the system in place. As equipment is replaced, the controllers and hardware associated with the equipment should be replaced and integrated with the DDC BAS. As outlined above, consideration should be given to replacement integration for the heat pump controllers to the BAS.

Plumbing

Water Entrance: There is a 6" cold-water line entering the building from the municipal service. The water line comes into the Storage Room adjacent to the Boiler Room where it serves both the automatic sprinkler system and the domestic water service. The domestic water service is sized at 2" and incorporates both a city water meter and a reduced pressure zone backflow prevention device. The service is original to the facility.



Domestic Hot Water: Domestic hot water is provided by a storage type, natural gas fired, condensing water heater located in the boiler room. The heater is manufactured by AO Smith and has a storage capacity of 100 gallons with an input rating of 199,000 BTU/hr. The unit was installed in 2013 and is nearing the end of its published service life (15 years). In fact it is reported that a similar model has already been replaced in two of the Elementary Schools. Water is stored at 120 degrees for distribution throughout the facility. A digital master mixing valve, also located in the boiler room provides

control for the hot water temperature in accordance with ASSE 1017 requirements. There is currently no independent loop to serve the kitchen area. By code, sinks used for food prep and cleanup are required to utilize 140 degree water or a means for chemical sanitation.

Hot Water Recommendation: Consider replacement for the water heater in the near future. Also, consider increasing the temperature at the water heater to 140 degrees and add a second mixing valve and domestic water loop to serve the kitchen area. The existing mixing valve will continue to provide 120 degree water to the remaining areas of the facility.

Piping: Domestic hot and cold water piping that was visible is primarily copper with soldered fittings. Piping appears to be well insulated throughout.

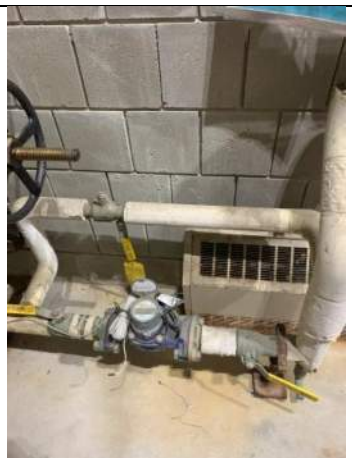
Piping Recommendation: No action required.

Sanitary Waste: The sanitary waste, based upon a review of the original drawings, exits the facility as a 6" service at the kitchen area. The sanitary waste is directed to a municipal service. Domestic waste and vent piping was not specifically accessed for observation during the assessment but it is reported to be primarily constructed of cast iron and no issues with drainage were reported.

Sanitary Waste Recommendation: No action required.

Grease Trap: Grease waste exits the facility as a 4" service from the kitchen area. The grease waste is routed to an on site, 1,000 gallon grease trap based upon a review of the original drawings. It is reported that the grease trapped is routinely cleaned/serviced with no issues reported.

Grease Trap Recommendation: No action required.





Plumbing fixtures: Water closets are manual flush valve type, with a combination of both floor mounted and wall mounted units, all of vitreous china construction. Urinals are wall mounted white vitreous china with manual flush valves. Lavatories are wall mounted white vitreous china units with primarily single handle manual faucets. There are several lavatories that have exposed traps below them, and have no ADA trim kits over the exposed piping. Classroom sinks are stainless steel drop in units with two handle gooseneck faucets and separate bubblers. Modern drinking fountains with bottle fillers have been installed, and were in good working order. In general, the plumbing fixtures were well maintained and operational, however they appear, for the most part to be original to the facility placing them at the end of their published service lives (20-40 years).

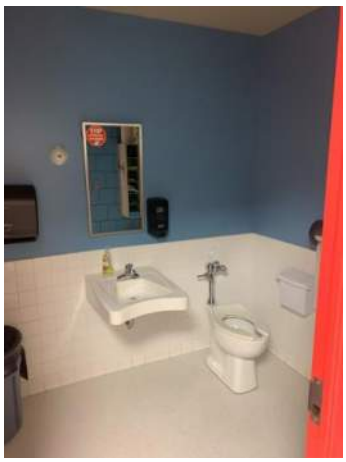
Plumbing Fixture Recommendations:
Consider replacing the fixtures and trim in the near future as they are at the end of their published service lives. All exposed piping should be covered as required by Maine plumbing code to meet ADA requirements.

Rain water: Based upon a review of the original drawings, roof drains carrying rain water exit the facility as a 10" service at the east side of the Classroom wing. There are no deficiencies reported with this system.

Rain Water Recommendation: No action required.

Natural Gas: Natural gas enters the facility near the Kitchen and serves kitchen cooking equipment, the boilers, and the domestic water heater. The piping is constructed of schedule 40 steel with screwed fittings. The entrance contains a meter and main pressure regulator at the exterior of the building, supplied by the municipal service.

Natural Gas Recommendation: No action required.





Fire Protection



Sprinkler System: The school incorporates automatic sprinkler protection throughout. The system is fed by a 6" riser located in the storage room adjacent to the boiler room. It did not appear that a backflow prevention device was installed at the service.

Sprinkler System Recommendation: Install a double check backflow prevention device as required to meet the local water district's requirements.

Electrical Systems Narrative



- The three-phase power distribution system equipment serving the building appears to be older but functional. If expansions to the facility are planned that will add additional electrical load to the building, new panels fed from one of its two spares on the MDP will need to be installed to service them since all of the sub panels supplied by the main distribution panel are full.
- There is a three phase circuit breaker installed on the number 5 circuit of the main distribution panel that is labeled "Bad Breaker" with this circuit breaker currently in the "on" position with no loads listed on the schedule for it. This circuit breaker should be investigated and opened to determine if it supplies any loads in the building and replaced if it does or left in the off position if it does not.
- The lighting fixtures for the building were recently upgraded to LED models approximately 4 years ago but dimmable switches in the classrooms were not included in the upgrade. The principle said that installing dimmable switches in the classrooms would be very helpful to the

teachers for many of the presentations they provide their students.

- Emergency egress and exit light fixtures appear to be adequate and have an appropriate layout. It is recommended that a "pull the plug test" be performed to ensure all units are functioning properly, emergency lighting units are aimed appropriately to illuminate the intended egress paths, and to ensure 1.5 hours of battery life is available.

- A photometric test should be performed on the exterior lighting to verify adequacy for security camera coverage. The number and placement of all of the building's security cameras, both interior and exterior, needs to be evaluated for meeting the security needs of the facility.

-

Electrical System Distribution

The main distribution panel (MDP) is a 1988 GE type CCB switchboard with a 1200 Amp bus rated, three-phase, 4 wire, 208Y/120 V service powered by an underground feeder routed from the secondary side of a 150 kVA three phase 12.47 kV / 208/120 V pad-mounted transformer. The MDP is protected by a 1200 A main service disconnect circuit breaker. Historical peak load demand from the past 12 months for the building was recorded by CMP to be 88 kVA. There is no surge protector installed for the MDP making everything powered by the building vulnerable to lighting strikes. One odd note on the MDP is that the three phase circuit number 5 is labeled "Bad Breaker" with the circuit breaker in the "on" position with no loads listed on the schedule for it. The MDP supplies first floor supply panels A and A1, 2nd floor supply panels B and B1, gym panel C, boiler room panels D and D1, and kitchen panels K and K1, all of which are three phase 208/120V panels. All of the sub

Main Distribution Panel



Pad Mounted Transformer



panels outside of the kitchen have all of their circuits assigned to loads with no spares.

Since the MDP is 36 years old, it is worth noting that General Electric claims that the intended service life for their electrical distribution switchboards is only 30 years, noting that with age, the equipment will become less reliable and more prone to failure while at the same time, because the unit has been out of production for more than 30 years, the prospect of finding repair parts will become increasingly remote. Despite its age, the MDP appears to be in good condition with the only obvious red-flag being the circuit 5 slot labeled as "Bad Breaker", which should be investigated and opened to determine if it supplies any loads in the building and replaced if it does or put in the off position if it does not. Since all of the sub panels the MDP supplies appear to be full, new sub panels will need to be added to the facility and fed from new circuit breakers installed on the two three phase spare slots located on the MDP should any requirements for new electrical loads arise.

Fire Alarm Panel (Internal)



Interior Lighting and Controls

The facility underwent a major re-fit in approximately 2020 in which all of its lighting fixtures were replaced with LED models. Lighting controls throughout the facility are standard on-off switches with occupancy sensors for the hallways and office areas (not in the classrooms). The principle expressed that there is a desire to have LED dimmer switches installed in the classrooms to aid in presentations.

Emergency Lighting Battery Pack



Exterior Lighting and Controls

Eight exterior lighting fixtures were observed around the building and three were observed in the parking lot. The custodial staff believe

all of the exterior lights are photometric operated and don't really have any knowledge over whether the lighting coverage is adequate noting that nearly everyone who works at the school's day ends before 5 PM.

Security for the facility could be improved by performing a lighting photometric survey to ensure adequate lighting is supplied around the parameter of the building so that exterior cameras can capture what is happening around the building at night.

Security Camera



Emergency Stand-by Power System

No emergency or stand-by power system is installed at the facility. If it is desired and funded, we would need to meet with the building ownership and facility management to determine what loads would be required to have emergency standby power (i.e. just essential loads such as life safety and freeze protection, or for just certain shops, or even whole building) and whether installing an emergency power system is justified from a cost vs reliability gain perspective.

Intrusion Detection Panel



Emergency Lighting System

Installed EXIT signs appear to all be NFPA 101.9 size and location conformant. This building's emergency exit lighting is powered through five central battery packs that each supply individual strings of emergency lights. The custodial staff stated that they test the emergency lighting operation monthly but do not verify whether it has 1.5 hours of battery life. It is recommended that both the EXIT signs and emergency lighting be tested IAW with the guidelines of NFPA 101 7.9.3 to ensure they are NFPA 101.7.9.1.3 and 101.7.10.4 compliant.

Fire Alarm System

The Fire Alarm Panel notifies a private 3rd party (Maine Fire Protection Systems) who then notifies the fire department in the event of an alarm. The fire alarm panel was installed in 2019 and has received regular maintenance throughout its life. The building does have a sprinkler system and its smoke detector coverage appears adequate throughout and it does have a fire department key box (Knox) installed by its main entrance.	
Lightning Protection System The facility does not have a lightning protection system. The owner has not requested or budgeted to have one installed and an NFPA 780 Annex L Lighting Risk Assessment has not been performed for the facility.	
Data/Telephone/Classroom Intercom/Clock Systems The main WIFI hub and the local Network Servers for the facility are located in the library and is equipped with a battery backup UPS. The building staff who accompanied my tour had no knowledge of the adequacy of the UPS or whether it has been tested. The building utilizes a modern Valcom announcing system that allows the front office to make building wide announcements as well as to make announcements that are addressable to individual classrooms but the system is one-way only meaning the front office can talk to the classrooms but the classrooms cannot speak back.	

Security

Access Control Systems

The only door to the building with electronic access control is the front main entrance that has a card reader. A buzzing unit is installed to alert the receptionist of visitors and grant them access via an unlock button located at the front reception desk. The building does have a fire department key box (Knox) located near the main entrance.

CCTV Systems

Security cameras are installed in most of the building hallways and building entrances. The cameras use a wireless interface to connect with the building server and their video can be accessed through private security company account, which the receptionist and facility management have access to. Facility management has expressed concern about the current placement of the interior camera coverage and would like it to be re-evaluated.

Intrusion Detection Systems

The facility has motion detectors for each of the exterior doors of the building that feed a central security panel (Life Safety Power) that is integrated with the fire alarm panel. The security alarm system for these doors is activated at the end of work-day by a control at the reception desk. Notification of any triggered security alarm is sent to a 3rd party (Maine Fire Protection Systems) who then notifies facility management and the police as required.

2.5 Cony Middle and High School

Cony Middle and High School opened in 2005 as a high school with an anticipated capacity of 1,224 students at 80% utilization. In 2009, grades 7-8 were moved to the building. As of October 2024, there were 327 students in grades 7-8 and 681 students in grade 9-12 for a total of 1,008 students.

Administration An administrative suite contains offices for both MS and HS principals and guidance counselors and is adjacent to a shared nurse suite.	
Typical MS Classrooms The classroom wing at Cony is a two-story structure with double loaded corridors wrapping an interior courtyard. Nearly all MS classes are on the second floor (there is one shared UA classroom on the first floor). 23 classrooms on the second floor are used for the middle school, including 3-4 UA rooms which are used by both MS and HS students. The classrooms are typically in the 730 sf – 760 sf. Two of the rooms used for science are 830 sf and three rooms used for science are closer to 950 sf. Only one of the science rooms is set up for science, based on the original design. Corridors have lockers on both sides. Staff reports the need to stagger release time among the middle school students to lessen congestion in the hallways.	  
MS Corridors Corridors have lockers on both sides. Staff reports the need to stagger release time among the middle school students to lessen congestion in the hallways.	

Special Education On the second floor of the classroom wing, a former drafting classroom is used as a Special Education room with three teaching spots. Two additional rooms in the CATC building are used for SPED.	
OT/PT A shared OT/PT room is off the main corridor adjacent to the cafeteria. The room does not have natural light. Staff report that sound from the cafeteria is disruptive in this space.	
Music, Band and Art There are separate band and chorus rooms, each with access to practice rooms and storage. These rooms are adjacent to dressing rooms for the auditorium. There are two art rooms which share storage and a kiln space.	 
Gymnasium There are two gyms – a full size gym for high school and a half size gym for the middle school.	



Cafeteria

There are four lunch periods on the cafeteria, recently increased from three due to administration's concern that the number of students in each of three periods was too great.

The middle school has two lunch periods and the high school has two lunch periods. While the HS population is larger, many students have lunch privileges and can leave campus for lunch.

The cafeteria is an interior space, centrally located between classrooms, administration, gym and UA spaces and the performing arts center. Its central location means that the edges of the cafeteria are also corridors.





3.0 SITE ANALYSIS AT AUGUSTA ELEMENTARY SCHOOLS

Following is documentation provided by Gorrill Palmer Engineers.

GORRILL PALMER
An LJB Engineering Company

Site Facilities Assessment – Lillian Parks Hussey Elementary School

To:	**Robin Tannenbaum** **CHA Architecture, P.C.**	**From:**	**Douglas E. Reynolds, PE**
Date:	**November 8, 2024**	**Re:**	**Augusta Public Schools Facilities Assessment** **Lillian Parks Hussey Elementary School** **CHA Architecture, P.C.**

PROJECT BACKGROUND:

It is our understanding that the Maine Department of Education has requested a Facilities Assessment of Lillian Parks Hussey (LPH) Elementary School which from a land use/site development perspective will focus on the following:

- The age and status of various systems and key infrastructure
- The size of the overall site and site features/amenities
- The ability of the site to accommodate expansion of the existing facility.

As requested by CHA Architecture, Gorrill Palmer has observed and evaluated the existing conditions during a typical day for the morning drop off and afternoon pick up at LPH Elementary School. The purpose of this memorandum is to provide observations and recommendations for the necessary site improvements for the existing LPH Elementary School to continue to serve the Augusta Public Schools for another 40+ years. For the purpose of this analysis, it was assumed that any improvements would need to accommodate continued use of the LPH Elementary School. Further analysis may be required to determine if the recommendations presented in this analysis would be feasible.

REFERENCES:

- Field reconnaissance by Gorrill Palmer on Friday October 18, 2024.
- LiDAR topography from the Maine Office of GIS
- Soils mapping from the US Department of Agriculture database
- Wetlands mapping from the National Wetlands Inventory database
- Habitat mapping from the Maine Inland Fisheries and Wildlife database

EXECUTIVE SUMMARY:

The Lillian Parks Hussey Elementary School facility features one large school building, parking in various locations for staff and visitors, playground, play field, and swing set. The school is located primarily adjacent to residential homes located along Quimby Street, and Gedney Street as depicted on the attached figures. The entrance to the facility is located on Quimby Street which runs along the southern boundary of the property. The main exit for the facility is located on Gedney Street on the western side of the site. Fairfield

Street, which is also perpendicular to Pearl Street, is a dead end road that abuts the western property edge. An aerial map of the existing site is depicted on Drawing E1 following this narrative.

In general, site infrastructure and amenities are limited as summarized below. These recommendations are expanded upon further throughout this assessment.

- The site does not appear to provide adequate space for passenger vehicle drop offs, especially during the afternoon period where vehicles were obstructing Quimby Street.
- Outdoor play areas appear to be limited given the student population.
- Pavement areas appeared to be deteriorating and may need repair.
- Utilities appear to run underneath trees, making future maintenance challenging.

The lot is only 10 acres in size and has limited space for improvements. The combination of bedrock, apparent drainage ways in the wooded area, and severe slopes make expanding the development footprint an unlikely option.

EVALUATION OF KEY INFRASTRUCTURE:

Traffic Access:

The site utilizes a combination of one-way and two-way traffic flows for access to the front and rear of the school, Passenger vehicles utilize the one-way road that loops around the back of the school to drop off / pick up students then exit the site by turning right onto Gedney Street. Staff and visitors that utilized the several parking areas were observed leaving the site onto both Gedney Street and Quimby Street. Bus drop offs/ pick ups occurred in front of the main entrance on the western side of the school via the primary drive from Quimby Street and exiting onto Gedney Street. A sign stating “do not enter from the hours of 8 am – 3pm” is present at the end of Gedney Street to discourage the use of this access point as an entrance which appears to be effective.

The facility and surrounding neighborhood feature a network of sidewalks and crosswalks which provide pedestrian access to the site from both Gedney Street and Quimby Street. Sidewalks exist on the south side of Quimby Street, the north side of Pearl Street, and on both sides of Gedney Street. Approximately 30 pedestrians were observed accessing the school via Gedney Street and Quimby Street.

Traffic Circulation:

Gorrill Palmer completed a site visit on Friday, October 18, 2024 to observe school operations at drop off and pick up times. During winter months, we would anticipate issues regarding traffic flow and pedestrian safety would be worsened by snow and ice. Findings from these visits are presented below.

Morning Drop-Offs

In general, the morning drop off period began at 7:30 am and most drop offs were completed by 8:30 am. Parents began arriving at approximately 7:30 and buses began arriving at approximately 7:50 am. The gate allowing access for passenger vehicle drop offs behind the building was opened at 7:45 am and closed at 8:35 am by staff. Prior to the gate opening only one vehicle was queued in this location. At 8:00 am, students were able to begin entering the school using the front (for buses) and rear (for passenger vehicles) entrances. Staff placed cones along the southeast corner of the building to prevent passenger vehicles from

traveling along the south side of the building. A total of 60 passenger vehicle drop offs were observed via the parent drop off road that loops around the school. A total of 30 students were observed walking towards the school from the surrounding streets. Two passenger vehicle drop offs were observed via the front parking lot after buses had departed 8:30am. A total of five standard size buses, and one half-sized bus were observed. The buses parked directly in front of the school, blocking access to Gedney Street. The max queue lengths and other general observations are depicted on the AM Drop-Off Circulation Observations (Drawing T1) included in Attachment 2.

In general, morning traffic circulation was observed to be challenging as the site is constricted by the following:

- Two passenger vehicles were observed coming into the general parking area in the front of the school and turning around to the back parking lot to enter the parent drop off queue.
- Students dropped off by passenger vehicles were observed entering in the rear of the school (Door 14). Ideally all students would use the same entrance.
- Cones were placed to block off the road on the west side of the crosswalk located at the south end of the school connecting to Quimby Street.
- Once 8:00 am occurred, passenger vehicle drop offs occurred steadily until 8:25 am.
- All passenger vehicle drop offs were observed turning right out of the school onto Gedney Street.
- Pavement markings included arrows pointing towards Quimby Street which may confuse vehicles.

Afternoon Pick-Ups

In general, the afternoon pick up period began at 2:40 pm and most pick ups were completed by 3:00 pm. Parents began arriving at approximately 1:35 pm and buses began arriving at approximately 2:05 pm. At 2:40 pm, students were able to begin exiting the school using the front (for buses) and rear (for passenger vehicles) entrances. The gate allowing access to the road for passenger vehicle drop offs was opened at 2:15 pm and closed at 3:05 pm by staff. Prior to the gate opening 13 passenger vehicles were queued in this location. A total of 44 passenger vehicle pick ups were observed leaving the property via Gedney Street and 41 of these vehicles utilized the pickup loop. The other three passenger vehicles pickups were observed parking in designated spots and leaving from the main entrance. A total of 24 students were observed walking from the school to the surrounding streets (6 students exiting to Quimby Street and 18 students exiting onto Gedney Street). A total of five standard size buses, and one half-sized bus were observed. The half-sized bus parked on the west side of the bus access drive, and students on this bus were dismissed first at approximately 2:30pm. The regular sized buses parked on the east side of the bus access drive and generally loaded one at a time. The max queue lengths and other general observations are depicted on the AM Drop-Off Circulation Observations (Drawing T1) included in Attachment 2.

In general, afternoon traffic circulation was observed to be challenging as the site is constricted by the following (please note some comments are the same as the AM. Pickup comments):

- Congestion in the afternoon was observed to be more than the morning. This is likely due to the fact that in the morning, students are able to gradually filter into the school allowing drop offs to be staggered. However, at the end of the day students are released in a more simultaneous manner. As a result, parents are simultaneously waiting for students to be released which creates a larger queue.
- After the gate was opened and prior to dismissal a total of 28 vehicles were queued waiting for the dismissal of students. The line generated by the 28 vehicles extend onto Quimby Street. Two

vehicles were observed queueing on Quimby Street waiting to turn left onto the site. During this time, buses had difficulty accessing the site due to the vehicles queued on Quimby Street.
- Students picked up by passenger vehicles were observed exiting in the rear of the school (Door 14). Ideally all students would use the same exit.
- All passenger vehicle pick ups were observed turning right out of the school onto Gedney Street.

Recommendations

- Overall, the site circulation may require modifications. The following are potential ways to improve safety and conform to basic school circulation principles including:
    - Improving pavement striping (arrows) and signage from the entrance from Quimby Street to direct traffic.
    - Separating bus, passenger vehicle, and pedestrian activities to promote safety and improve traffic flow.
    - Providing an ADA compliant route to the building (may involve relocating the ADA space).
    - Providing pedestrian access to the school entrances without needing to cross travel lanes;
    - Providing passenger vehicle circulation that is not interrupted by buses.
    - Separating passenger drop-off from bus routes, staff parking areas, and service entrances.
    - Providing a clear line of sight from the main entrance/admin office to the arriving vehicles.
    - Providing a single point of access for bus/passenger vehicle drop offs and pick ups, and visitors.
    - Based on site observations, we recommend traffic improvements be designed to accommodate 6 buses.
    - Based on these observations we recommend traffic improvements be designed to improve the capacity for parent drop off/pickups to the greatest extent practicable up to 48 drop off spaces.

As a general practice, the two loops would be separated by a raised sidewalk that will allow pedestrians to access school entrances without entering travel lanes. One potential issue with this approach is that parents, staff, and visitors would need to know which side of street (Quimby or Gedney) they should be using to access the site.

Conceptual improvements to the site are beyond the scope of this study. For the purpose of this analysis, it was assumed that any improvements would need to accommodate continued use of the Hussey Elementary School. Further analysis may be required to determine if the recommendations presented in this analysis would be feasible.

Parking:

The LPH Elementary School site appeared to provide a total of approximately 52 spaces (1 ADA accessible and one visitor stall) for staff and visitors. During school hours, approximately 17 (33%) of these spaces were observed to be empty.

To comply with the Americans with Disabilities Act (ADA), 2 ADA compliant spaces must be provided in lots with 26 to 50 spaces. The main parking lot at the LPH School appears to only have 1 ADA compliant space which does not comply with ADA requirements.

The one ADA space on site is located to the west of the school in the northern most space. The route from the unloading space to the tip down across the street in front of the main entrance to the school does not

appear to be an ADA compliant route since the cross slope appears to exceed 2%. Additionally, the route is not perpendicular crossing the street, meaning a pedestrian would have to travel diagonally up the street in order to access the sidewalk in front of the school.

According to the Town Code, primary education Schools are required to provide 1 parking space for each adult employee. The required parking would be as follows based on information received from the School District:

Use	Employees	Parking Requirement	Required Parking	Provided Parking
Lillian Parks Hussey Elementary School	47	1 per Employee	47	52

As shown in the table above, the LPH Elementary parking lot appears to be 5 spaces above what is required by the town code.

Recommendations:

- Additional investigations may be warranted to evaluate the demand for ADA access and to create solutions to meet ADA parking space count and access route requirements.
- Sidewalks along the south side of the building and along the edge of the parking area do not have curbing or any physical barrier to separate vehicular and pedestrian traffic. Curbing should be provided for all pedestrian access routes.
- Additional investigations may be required to determine if the facility has adequate space to accommodate events at the school.

Permitting and Regulations:

Local Permitting and Regulations:

The parcel is identified as Lot 147 on Tax map 43 of the Town Assessors Maps. This lot is in the RA (low density residential) zone where schools are a permitted principal use. Based on limited review of the Augusta City Charter, the existing use appears to generally comply with the town code.

A local site plan permit would also be required for any future improvements that involve a disturbance of land or construction or replacement of any new building or structure (including the addition of accessory structures) expansion of impervious surfaces more than 1 acre. Any future improvements will need to meet the requirements of the City Code. We recommend further review of the town code to be included in future phases as conceptual plan(s) are being developed.

State Permitting and Regulations:

The Lillian Parks Hussey Elementary School was built in 1954 and would not have been required to obtain a Site Location of Development Permit, or Stormwater Law Permit from the MaineDEP at the time. Projects that create over 1 acre of impervious area after 1997 are required to obtain a Stormwater Law Permit. Projects that create over 3 acres of impervious area after 1975 are required to obtain a SLDA Permit. If improvements increase the impervious area beyond the 1 acre threshold, a stormwater management system will be needed, which will need to comply with the MaineDEP Chapter 500 rules. If the 3 acre

threshold is exceeded, a SLDA Permit would need to be obtained, which would trigger the need for a more extensive permitting process.

Recess and Athletics:

To the north of the school building is a grass field area. To the northeast of the school a swing set and some playground equipment is located with a woodchip base. Directly to the east almost abutting the school there is a rectangular playground with jungle-gym equipment with a wood chip base that appear to be in good condition. There is an existing bike rack located in the northwestern corner of the site abutting the tree line which appears to be in poor condition with limited use (no bicyclists were observed accessing the site).

A galvanized chain link fence runs from the north side of the school to a gate at the access loop, then along the western and norther boarder of the grassed play area. Portions of this fence and the play field backstop appear to be weathering and the access gate adjacent to the building is not properly tied to the supports (creating a hole in the fence). To the east of the school abutting the woods line there is approximately 300 feet of orange (plastic) construction fence that appears to be intended to enclose the play areas however, there is an approximate 100 foot break from the construction fence to the chain metal fence where it wraps around the grassed play area to the northeast of the school. See existing conditions plans for approximate location of fencing.

Recommendations:

- If the School District anticipates the bike rack would benefit the elementary school students, it should be placed in a more prominent location at one of the school's main entrances.
- If the School District anticipates additional hard or soft play areas would benefit the middle school students, additional investigations may be required to develop potential locations for additional play areas.
- The galvanized fencing/backstop may need to be replaced or maintained soon as portions of the fence appear to be weathering. The construction fencing may need to be replaced with a more permanent fence such as galvanized fencing.

Topography and Drainage:

In general, drainage flows from the south to north. The site is split into two portions and the building acts as a drainage divide. The majority of flow from the south and west of the property draining to a closed municipal drainage system on Gedney Street. Runoff from the eastern portion of the site generally drains towards a shallow drainage swale which runs along the east edge of the access loop, outletting to the north between the swing set and grassed play area. Minimal slopes away from the building and within the shallow swale are likely to cause ponding/icing issues especially during winter months. Based on discussions with maintenance personnel, an underdrain was installed within the drainage swale to assist in drainage, however gravels on top of the underdrain pipe appear to be compacted to the point where the runoff may not infiltrate into the pipe. What appeared to be exposed bedrock was observed on the east side of the building during field reconnaissance, which may limit options for potential drainage improvements.

Exposed bedrock was observed along the grassed slope and in the forested area to the east of the Hussey Elementary school. Closer to the eastern property line was an apparent drainage area within a low point between two ridges. Given the signs of erosion present in the drainage area, further investigations may be warranted to determine if this is a regulated jurisdictional stream.

Recommendations:

- Following a significant rain event, we would recommend observing the facilities to note any drainage issues within the campus. Additional catch basins and underdrain systems may be needed to facilitate proper drainage.
- Several catch basin rims were completely covered with leaves and debris. All catch basins and manholes on site may need to be maintained as needed. Catch basins appeared to generally be constructed with masonry bricks and may need to be upgraded to precast concrete structures in the future.
- Improvements to the roadway and parking network may require alterations to the existing stormdrain network.

Utilities:

The site is serviced by a water main that appears to generally follow the alignment of Quimby Street with a hydrant located on the south side of Quimby Street across from the school. The site is served by a gas main that enters the building on the west side of the building. The site is also serviced by public sewer, which runs in a westerly direction down Gedney Street. Three-phase power, and other services appear to come from Quimby Street on the east side of the parking lot and connects to the school just beyond southeastern corner of the school via overhead wires.

POTENTIAL FUTURE EXPANSION CONSTRAINTS:

The Department of Education previously suggested that elementary schools should be sited on a land area of 10 acres, plus 1 acre per 100 students. At approximately 10 acres of land area, the existing site would not be adequate to serve the existing school. Based on information received from the school district, LPH Elementary School serves 236 students, which would require a 12.4 acre site. Enrollment projections would be needed to determine when a school expansion would be needed.

Onsite Expansion Potential:

Expansions of the school facility beyond the existing development footprint would be challenging given the presence of apparent bedrock and apparent drainage area on the eastern portion of the property. The existing facility is located on the east side of a large ridge which poses additional design challenges to achieve grades for any potential future development.

Resource Mapping:

The USDA soils mapping identifies the surficial soils on site as Lyman-Turnbridge and Hartland soils located throughout the entire site. The Hartland soils are typically well drained soils with a seasonally high water table. Lyman-Turnbridge soils consist of shallow and deep well drained soils with a moderate to high seasonal water table. The soils are depicted on the Existing Conditions Plans included in Attachment 1.

Based on Maine Department of Inland Fisheries and Wildlife mapping, the site does not contain any essential habitats for threatened or endangered species. However, portions of land to the east and north appear to contain mapped wetlands which may limit the possibility of future expansions as wetlands have the potential to contain significant wildlife habitats.

The site does not appear to be located in a floodplain.

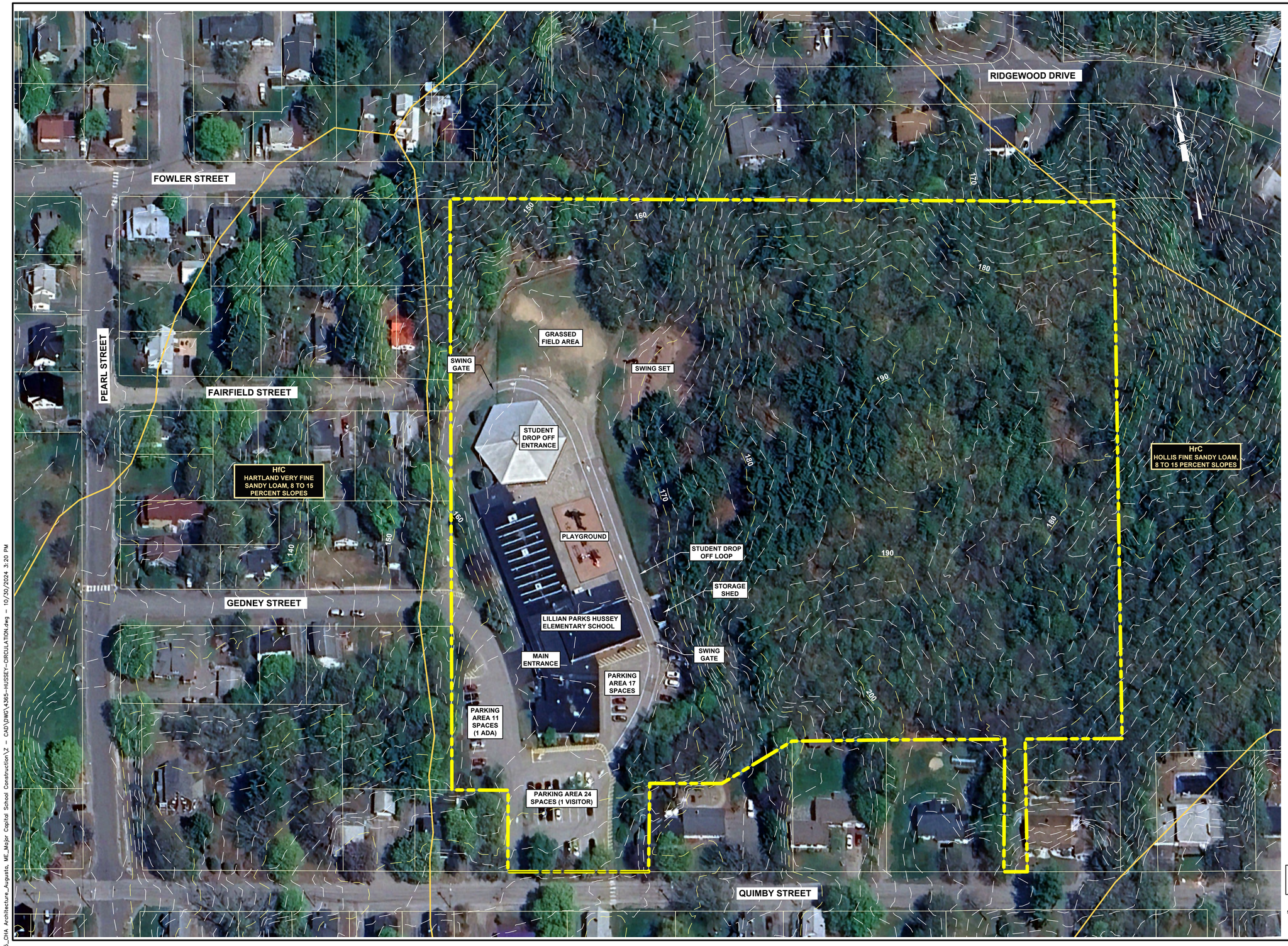
Recommendations:

- Additional investigations may be required to determine the amount of bedrock within the eastern half of the parcel and to review if a jurisdictional stream exists to determine if this land could potentially be developed.

Attachments:

Attachment 1 Existing Conditions Plan
Attachment 2 Drop-Off/Pick-Up Circulation Observations

ATTACHMENT 1
EXISTING CONDITIONS PLAN



NOTES:

1. PROPERTY LINE INFORMATION AND SITE AREA IS APPROXIMATE AND HAS BEEN PROVIDED BY THE CITY OF AUGUSTA GIS AND TAX MAP INFORMATION
2. CONCEPT PLAN PREPARED BASED ON LIMITED TOPOGRAPHIC AND BOUNDARY INFORMATION WHICH MAY REQUIRE MODIFICATIONS AS ADDITIONAL INFORMATION IS COLLECTED.
4. CONCEPT PLAN PREPARED WITH LIMITED COMMUNICATIONS WITH MUNICIPALITY WHICH MAY REQUIRE MODIFICATIONS AFTER REVIEW.
5. THE PROJECT SITE DOES NOT APPEAR TO BE LOCATED WITHIN A 100-YEAR FLOOD PLAIN.
6. CONCEPT SPECIFIC NOTES IDENTIFYING ANY DEVIATION FROM ORDINANCE.

LEGEND

- PROJECT PARCEL
- ABUTTER PARCEL
- GIS CONTOUR
- SOIL BOUNDARY

NOTE: THIS PLAN SET IS ISSUED FOR INFORMATIONAL PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

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Issued For	Date	By
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Design: –	Draft: –	Date: SEPT 2024
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File Name: 4365-HUSSEY-CIRCULATION.dwg

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South Portland, ME 04106

Drawing Name: **Existing Conditions Plan**

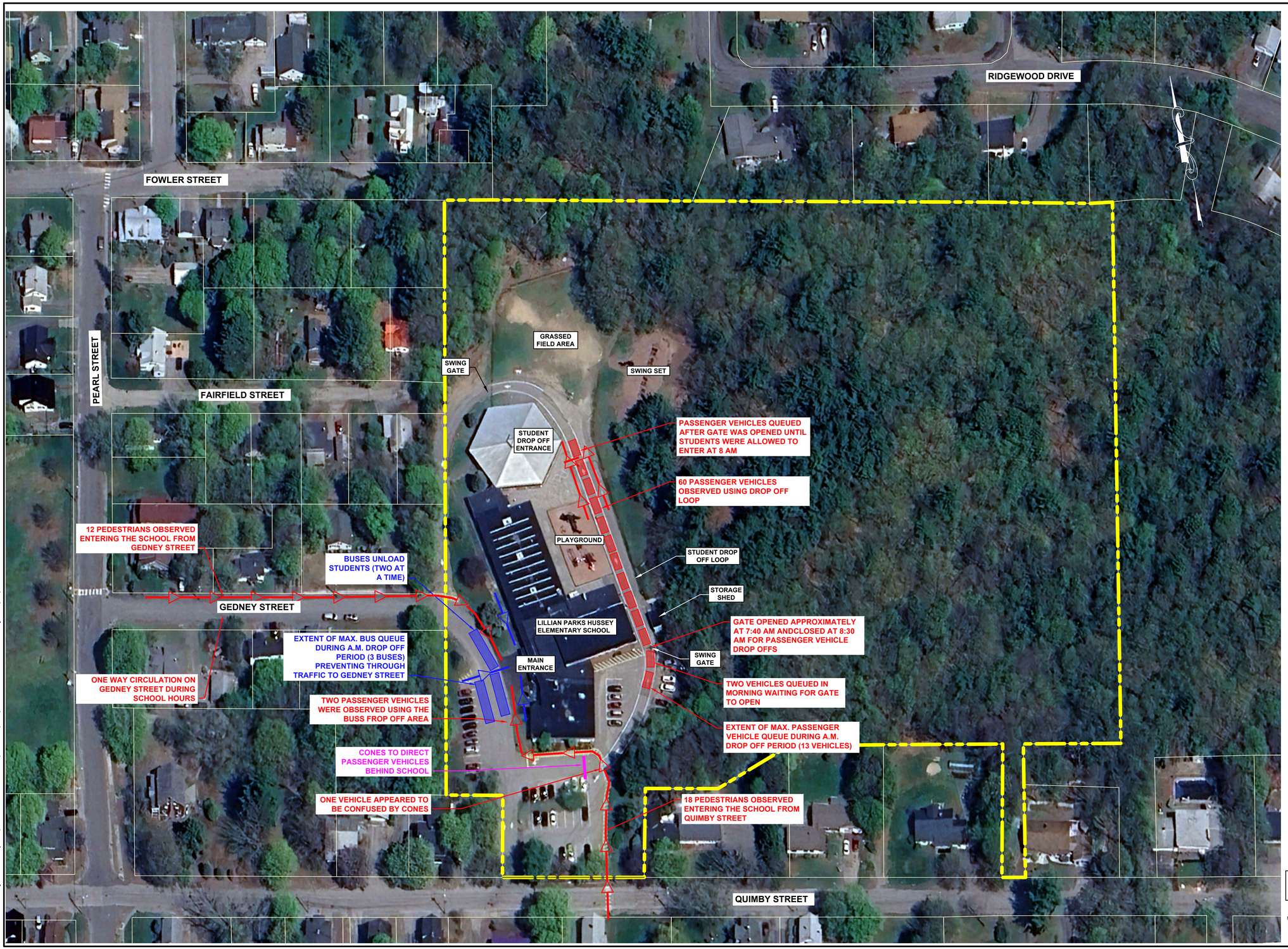
Project: **Lillian Parks Hussey Elementary School**
Augusta, Maine

Client: **CHA Architecture, P.C.**
49 Dartmouth Street, Portland,Maine 04101

Drawing No. *E1*

ATTACHMENT 2

DROP-OFF/PICK-UP CIRCULATION OBSERVATIONS



LEGEND

- BUS QUEUING AREA
- PARENT QUEUING AREA
- PEDESTRIAN ROUTE FROM PARENT DROP OFF/PICK UP
- PEDESTRIAN ROUTE FROM BUS DROP OFF/PICK UP

NOTES:

1. THIS PLAN IS INTENDED TO DEPICT TRAFFIC CIRCULATION PATTERNS ON A CONCEPTUAL LEVEL BASED ON OBSERVATIONS CONDUCTED BY GORRILL PALMER ON OCTOBER 18, 2024.
2. SCHOOL HOURS EXTEND FROM 8:00 AM TO 2:40 PM.
3. MORNING DROP OFFS WERE OBSERVED FROM 7:30 AM TO 8:30 AM.

NOTE: THIS PLAN SET IS ISSUED FOR INFORMATIONAL PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

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Design: –	Draft: –	Date: SEPT 2024
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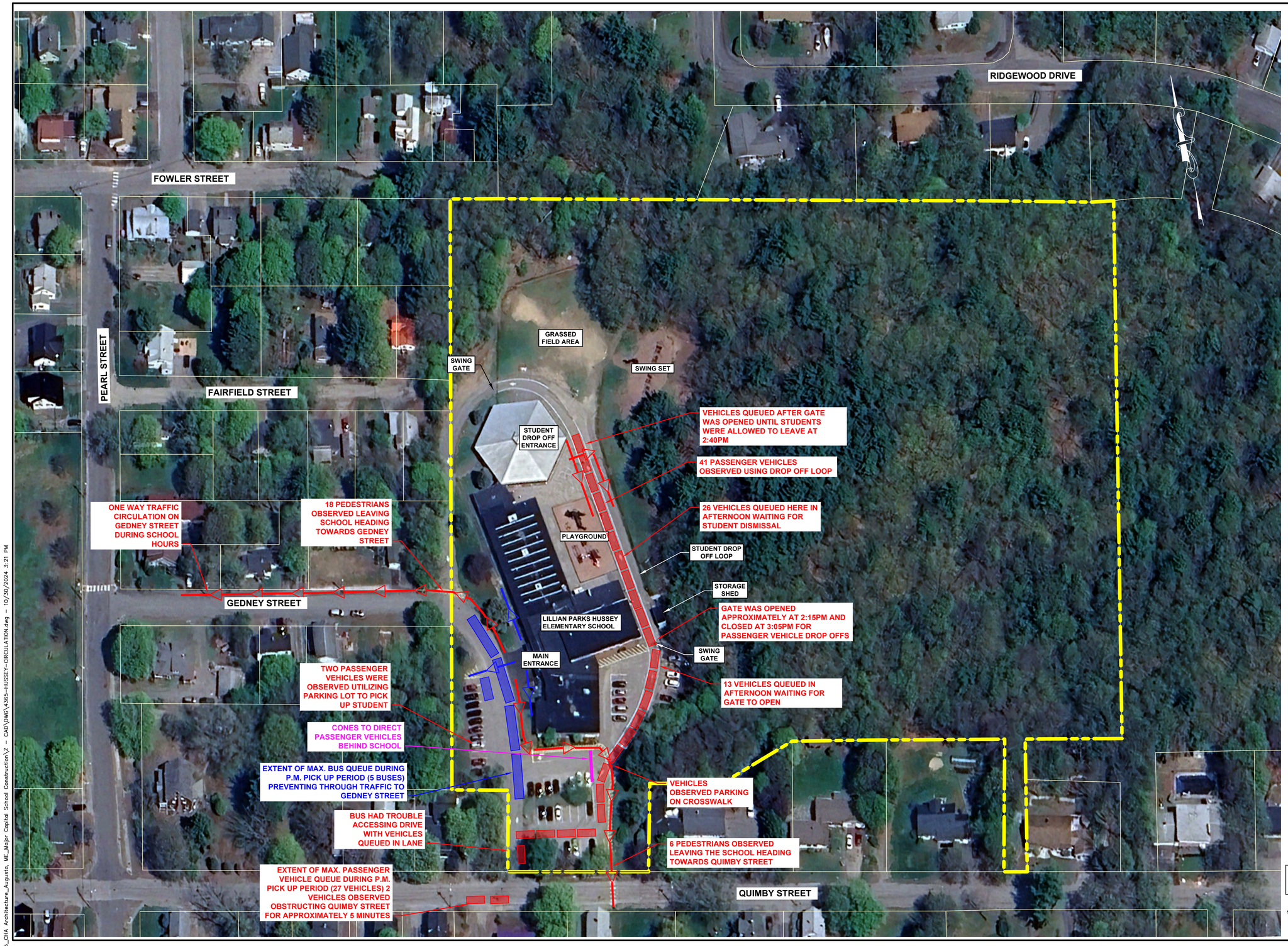
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300 Southborough Drive - Suite 200
South Portland, ME 04106

Drawing Name: AM Drop Off Circulation Observations
Project: Lillian Parks Hussey Elementary School
Augusta, Maine
Client: CHA Architecture, P.C.
49 Dartmouth Street, Portland,Maine 04101

Drawing No. T1

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LEGEND

- BUS QUEUING AREA
- PARENT QUEUING AREA
- PEDESTRIAN ROUTE FROM PARENT DROP OFF/PICK UP
- PEDESTRIAN ROUTE FROM BUS DROP OFF/PICK UP

NOTES:

1. THIS PLAN IS INTENDED TO DEPICT TRAFFIC CIRCULATION PATTERNS ON A CONCEPTUAL LEVEL BASED ON OBSERVATIONS CONDUCTED BY GORRILL PALMER ON OCTOBER 18, 2024.
2. SCHOOL HOURS EXTEND FROM 8:00 AM TO 2:40 PM.
3. AFTERNOON PICK UPS WERE OBSERVED FROM 1:40 PM TO 3:00 PM
4. BUSES AND PASSENGER VEHICLES LOADED SIMULTANEOUSLY BEGINING AT APPROXIMATELY 2:40 P.M.

NOTE: THIS PLAN SET IS ISSUED FOR INFORMATIONAL PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

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Drawing Name: PM Pick Up Circulation Observations
Project: Lillian Parks Hussey Elementary School
Augusta, Maine
Client: CHA Architecture, P.C.
49 Dartmouth Street, Portland,Maine 04101

Drawing No. T2

GORRILL PALMER
An LJB Engineering Company

Site Facilities Assessment – Sylvio J Gilbert Elementary School

To:	**Robin Tannenbaum** **CHA Architecture, P.C.**	**From:**	**Douglas E. Reynolds, PE**
Date:	**November 8, 2024**	**Re:**	**MSAD #53 Facilities Assessment** **Sylvio J Gilbert Elementary School** **CHA Architecture, P.C.**

PROJECT BACKGROUND:

It is our understanding that the Maine Department of Education has requested a Facilities Assessment of Sylvio J Gilbert Elementary School which from a land use/site development perspective will focus on the following:

- The age and status of various systems and key infrastructure
- The size of the overall site and site features/amenities
- The ability of the site to accommodate expansion of the existing facility.

As requested by CHA Architecture, Gorrill Palmer has observed and evaluated the existing conditions during a typical day for the morning drop off and afternoon pick up at Sylvio J. Gilbert Elementary School. The purpose of this memorandum is to provide observations and recommendations for the necessary site improvements at the existing Sylvio J Gilbert Elementary School to continue to serve the Augusta Public Schools community for another 40+ years. For the purpose of this analysis, it was assumed that any improvements would need to accommodate continued use of the Sylvio J Gilbert Elementary School. Further analysis may be required to determine if the recommendations presented in this analysis would be feasible.

REFERENCES:

- Field reconnaissance by Gorrill Palmer on Thursday October 17, 2024.
- LiDAR topography from the Maine Office of GIS
- Soils mapping from the US Department of Agriculture database
- Wetlands mapping from the National Wetlands Inventory database
- Habitat mapping from the Maine Inland Fisheries and Wildlife database
- Sunset Elementary School Plans dated May 15, 1969, and prepared by Henneberg & Henneberg Architects and City Planners.

EXECUTIVE SUMMARY:

The Sylvio J. Gilbert Elementary School facility is located on the south side of Sunset Avenue in Augusta as depicted on the attached figures. Sunset Avenue is a through street which appears to be owned by the Augusta School Department which provides access to the school building and parking lot from two directions (Dean Court and Townsend Street). The facility features one large school building, with a bus

drop off/pick up area on the south side of Sunset Avenue, a large parking lot on the north side of Sunset Avenue, and a service area on the west side of the building. The facility also features a large playground complex, two hard play areas, several grassed play fields, multiple obstacle courses / jungle gym equipment with a wood chip base. In total, the site is approximately 19.5 acres, with approximately 12 acres of the site being undeveloped woodland area. An aerial map of the existing site is depicted on Drawing E1.

In general, site infrastructure and amenities appear to meet the needs of the school. However, some key infrastructure components appear to be nearing the end of their life cycle as described below. These recommendations are expanded upon further throughout this assessment.

- Pavement areas and curbing appeared to be deteriorating and may need to be repaired soon.
- Jersey barriers at the bus drop off area may be replaced with a concrete island to improve the aesthetics of the facility

Additionally, the overall site may be improved through the use of:

- Turning Sunset Avenue into a 1-way street
- Speed hump(s) may be warranted to encourage slow moving traffic
- Additional signage for crosswalks and directing bus/passenger vehicle traffic

The combination of apparent drainages and severe slopes make expanding the development footprint an unlikely option. Expanding amenities within the existing development footprint may require LWCF prior to construction.

EVALUATION OF KEY INFRASTRUCTURE:

Traffic Access:

Sunset Avenue, Dean Court, Townsend Street, and Cummings Avenue are the surrounding streets that serve the Gilbert Elementary School. With the exception of Sunset Avenue, these streets also serve as access to the residential building in the neighborhood as well as access to the Sylvio J. Gilbert Elementary School and an assisted living facility the Chateau Cushnoc.

Sunset Avenue runs through the site and provides direct access to the parking area, drop off/pick up areas areas, and service areas. Access to the parking lot is provided via a pair of two-way entrances/exits located directly to the east and west of the school on the north side of Sunset Avenue. Bus drop offs/pickups occurred via the bus loop off of Sunset Avenue located on the south side of Sunset Avenue between the parking lot entrances, directly north of the school.

The facility and surrounding neighborhood feature a network of sidewalks and crosswalks which provide pedestrian access to the site from both Townsend Street and Dean Court. Sidewalks exist on both sides of Sunset Avenue, Dean Court, and a portion of Townsend Street. Based on site observations, the primary routes used by pedestrians are described below.

- Traveling south along Townsend Street towards Cummings Avenue, pedestrian traffic utilizes the sidewalk which is only located on the eastern side of the street. The crossing of Cummings Avenue is not delineated (ie. striping, signage, and ADA warning plates). Once past the intersection of Townsend Street and Cummings Avenue there are sidewalks on the east and west sides of the Townsend Street that continue into Sunset Avenue. There is no crossing between the west and east side of Townsend Street, as such, the sidewalk on the western side of Townsend Street does not appear to be heavily used by pedestrians. Pedestrians continue on the east side of Townsend Street

to the northern side of Sunset Avenue, then utilizing the only delineated crosswalk on site to cross Sunset Avenue and the bus loop to access the main entrance of Gilbert Elementary School.
- No pedestrians were observed coming or leaving from either side of Dean Court to the campus.
- Jersey barriers are located along the southern side of Sunset Avenue separating Sunset Avenue from the bus loop.

Recommendations

- Speed humps may be warranted along Sunset Avenue to encourage slow moving traffic.
- The bituminous sidewalk along Sunset Avenue partially along the northern side of the road is in poor condition and cracked in several locations which may need to be repaired soon.
- Sidewalk along both east and west sides of Townsend Street was observed to be in poor condition and the curbing along Townsend Street appears to have deteriorated over time in multiple places and should be replaced to improve pedestrian safety along Townsend Street.
- We would recommend installing crosswalk signing and striping at the intersection of Cummings Ave and Dean Court and Cummings Ave and Townsend Street.
- Jersey barriers at the bus drop off area may be replaced with a concrete island to improve the aesthetics of the facility
- Signage infrastructure on the campus could improve. A few examples are:
    - Adding stop signs at each exit of the parking lot.
    - Make pedestrian signage at crosswalks double sided. (Currently one sided faced towards oncoming traffic.)
    - Speed limit sign entering the campus from either direction on Townsend Street and Dean Court.
    - School zone signs with flashing lights

Traffic Circulation:

Gorrill Palmer completed a site visit on Thursday, October 17, 2024 to observe school operations at drop off and pick up times. During winter months, we would anticipate issues regarding traffic flow and pedestrian safety would be worsened by snow and ice. Findings from these visits are presented below.

Morning Drop-Offs:

In general, the morning drop off period began at 7:30 am and drop offs were completed by 8:30 am. Parents began arriving at approximately 7:30 and buses began arriving at 7:55 am. Students were allowed to enter the school at 8:00 am. Students who arrived prior to 8:00 am that were dropped off by their parents waited in the parking lot at the crosswalk until 8:00 am. Three students were observed walking to School. A total of 101 passenger vehicle drop offs were observed. A total of 7 full size buses and 1 half-sized bus were observed arriving at the school. The approximate max queue lengths and other general observations are depicted on the AM Drop-Off Circulation Observations (Drawing T1) included in Attachment 2.

In general, morning traffic circulation was observed to be challenging as the site is constricted by the following:

- The site does not appear to have any delineated visitor parking, as such, the passenger vehicle drop offs occurred on Sunset Avenue as well as the parking lot area.
    - The majority of passenger vehicle drop offs (59) occurred by parents parking in spaces within the staff/visitor lot. Generally, the majority of passenger vehicles entered the site via

Dean Court. Most of the drop offs that occurred in the parking lot required the vehicle to back up out of spaces to exit the campus. This is an additional safety concern with students, parents, and staff using the parking lots to traverse the site. 35 passenger vehicles exited onto Dean Court, while 24 vehicles exited onto Townsend Street leaving the parking lot.

- The rest of the passenger vehicle drop offs (42) occurred by parents parking along the northern side Sunset Avenue. The majority of vehicles entered Sunset Avenue from Dean Court however, several vehicles came down Townsend Street onto Sunset Avenue and then crossed into oncoming traffic to park along the northside of Sunset Avenue prior to the crosswalk.

- Two crossing guards were utilized during the drop off period. One stood on either side of the crosswalk on Sunset Avenue (north and south) to allow pedestrians to safely cross the street.
- Buses utilized the designated bus loop off of Sunset Avenue. The first bus parked on the east side of the crosswalk across Sunset Avenue. The second bus to the west of this crosswalk. Buses unloaded (two at a time) and kept this similar pattern to allow students who were dropped off to cross Sunset Avenue to access the school. A max queue of six buses was observed at 8:00.

Afternoon Pick-Ups:

In general, the afternoon pick up period began at 2:00 pm and most pick ups were completed by 3:00 pm. Parents began arriving at 2:00 pm and buses began arriving at 2:15 pm. Students were allowed to exit the school at approximately 2:40 pm. Parents were observed parking in spaces within the staff/visitor lot and walking to the end of the crosswalk located within the parking lot. Parents were also observed utilizing the north side of Sunset Avenue for pickups. In total 63 passenger vehicles were observed during the pick-up period. A total of 41 passenger vehicle pickups were observed using the parking lot and 22 passenger vehicles picked up students on Sunset Avenue. A total of 7 full size buses and 1 half-sized bus were observed arriving at the school. The approximate max queue lengths and other general observations are depicted on the PM Pick-Up Circulation Observations (Drawing T2) included in Attachment 2.

In general, afternoon traffic circulation was observed to be challenging as the site is constricted by the following (please note some comments are the same as the AM. Pickup comments):

- There did not appear to be any crossing guards in the afternoon. Buses appeared to intentionally not block the crosswalk at the entrance of the school leading to the parking lot.
- Congestion in the afternoon was observed to be more than in the morning. This is likely due to the fact that in the morning, students are able to gradually filter into the school allowing drop offs to be staggered. However, at the end of the day students are released in a more instantaneous manner. As a result, parents are simultaneously waiting for students to be released which creates a larger queue.
- There are no clear delineated parent pick up/ drop off areas. And as parents arrived, there was a staff member of the school calling for the dismissal of the student via a walkie talkie.
- It was observed that parent pickups that used the parking lot had to back up out of spaces in order to exit the property. This is an additional safety concern with students, parents, and staff using the parking lots to traverse the site.

Recommendations

- Overall, the site circulation does not appear to be in need of modifications, however the following are ways to improve safety and conform to basic school circulation principles including:
  - Separating bus, passenger vehicle, and pedestrian activities to promote safety and improve traffic flow.

- Providing passenger vehicle circulation that is not interrupted by buses.
- Separating passenger drop-off from bus routes, staff parking areas, and service entrances.
- Providing parallel parking spaces for parent drop offs to eliminate the need to back out of parking spaces.
- Based on site observations, we recommend traffic improvements be designed to accommodate 8 buses or maintain the staggered nature of bus arrivals.
- Based on these observations we recommend traffic improvements be designed to improve the capacity for parent drop off/pickups to the greatest extent practicable up to 80 drop off spaces.

As a general practice, the two loops would be separated by a raised sidewalk that will allow pedestrians to access school entrances without entering travel lanes. To accomplish this, changing Sunset Avenue to a one way street may need to be considered. One potential issue with this approach is that parents, staff, and visitors would need to know which street they should be using to access the site.

Conceptual improvements to the site are beyond the scope of this study. For the purpose of this analysis, it was assumed that any improvements would need to accommodate continued use of the Vickery Elementary School. Further analysis may be required to determine if the recommendations presented in this analysis would be feasible.

Parking:

The Sylvio J. Gilbert Elementary School appeared to provide a total of approximately 135 (4 ADA accessible stalls) spaces for staff in the one lot located off Sunset Avenue. There were no spaces designated as "visitor parking". It was observed that there were 49 school employees parked in the parking lot.

According to the City Code, primary education Schools are required to provide 1 parking space for each adult employee. The required parking would be as follows based on information received from the School Department:

Use	Employees	Parking Requirement	Required Parking	Provided Parking
Sylvio J. Gilbert Elementary	62	1 per Employee	62	135

As shown in the table above, the Sylvio J. Gilbert Elementary parking lot appears to be 73 spaces above what is required by the City code.

Recommendations:

- Parking appears to be excessive and may be reduced to allow for additional amenities on site, or modifications to the existing traffic circulation.
- We recommend maintaining a minimum of 62 parking spaces for employees, additional parking spaces may be provided for visitors. Signage/striping indicating visitor parking spaces may be beneficial.
- Additional investigations may be required to determine if the facility has adequate space to accommodate events at the school.

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Permitting and Regulations:

Local Permitting and Regulations:

The parcel is identified as Lot 38 on Tax map 30 of the Town Assessors Maps. This parcel is located in the RA (Low Density Residential) Zone where schools are a permitted principal use. Based on limited review of the Pittsfield Town Charter, the existing use appears to generally comply with the town code.

A local site plan permit would also be required for any future improvements that involve a disturbance of land or construction or replacement of any new building or structure (including the addition of accessory structures) expansion of impervious surfaces more than 1 acre. Any future improvements will need to meet the requirements of the City Code. We recommend further review of the town code to be included in future phases as conceptual plan(s) are being developed.

State Permitting and Regulations:

The original Gilbert School was built in 1971 and would not have been required to obtain a Site Location of Development Permit, or Stormwater Law Permit from the MaineDEP. Projects that disturb over 1 acre, or create over 1 acre of new impervious area after 1997 are required to obtain a Stormwater Law Permit. Projects that create over 3 acres of impervious area after 1975 are required to obtain a SLDA Permit.

If improvements disturb more than 1 acre of land, a Stormwater Law Permit-By-Rule would need to be obtained. If improvements increase the impervious area beyond the 1-acre threshold, a more extensive Stormwater Law Permit will need to be obtained, which typically requires the implementation of additional stormwater management systems. If improvements increase the impervious area beyond the 3 acre threshold, a SLDA Permit would need to be obtained, which would trigger the need for a more extensive permitting process.

Land & Water Conservation Fund Program Encumbrance:

Based on research to date, Gorrill Palmer is aware that the Land & Water Conservation Fund (LWCF) Program (6(f)) appears to have encumbered a portion of the site for the play areas to the south and east of the Gilbert Elementary School building. This 4.89-acre easement (Project #23-00591, Project Date: 1985) is depicted on the Existing Conditions Plans (see Attachment 1).

Based on our experience with other school projects encumbered by LWCF easements, if the easement area is disturbed, a similar use or easement area would have to be offered/negotiated with the Department of Conservation. Similarly, if access to the existing easement is changed, a revised access to the use will be required to be negotiated with the Department.

Recommendations:

- Upon finalization of conceptual plans, consultation with the LWCF should be initiated to obtain any necessary approvals and/or easement revisions for past and future improvements.

Recess and Athletics:

To the south and east of the Gilbert Elementary School is a field complex which features a baseball field, grassed field area, two separate hard play areas with basketball hoops, and playground equipment spread out within the play areas. The equipment and facilities all appear to be in good condition with the exception of some of the pavement on the hard play areas. The play area is surrounded by an approximately 5 foot high chain link fence which surrounds the outdoor play areas owned by the school.

The hard play areas have cracking in multiple areas with some pavement missing in the hard play area to the east of the school. The baseball field and grassed field area appears to be in good condition. The grassed field area to the east of the school appears to have been a baseball field with the latest imagery on google earth showing the field in 2003. The backstop fence is still present in the northeastern corner of the grassed field area. The playground features several smaller obstacle courses, swing sets, and slides with a wood chip base.

Recommendations:

- The hard play areas appear to be deteriorated and may need to be resurfaced and restriped soon.

Topography and Drainage:

Within the developed portion of the site are moderate slopes from Sunset Avenue to the forested area south of the Gilbert Elementary School. Generally, the forested sections of the site surrounding the school contain steep slopes ranging from 0% to 50%. The building appears to have been built higher than the surrounding ground so that water slopes in all directions away from the school. There is a steep decline to the south of the school leading to the play areas, this grading may create an ice hazard in the Winter. The school parcel appears to be lowest point in the surrounding neighborhood as there are steep slopes coming down Dean Street and Townsend Street as they connect to Sunset Avenue. Stormwater on Sunset Avenue and the staff/ visitor parking lot is collected by several catch basins located on each side (east and west) of the parking lot and on each side (north and south) of Sunset Avenue. It appears that the existing 36" CMP pipe which outlets from the existing catch basin located at the southerly portion of Sunset Avenue, east of the school was snaked with a 12" PVC pipe.

To the Southeast of the school there is an approximate 36" CMP outlet with constant flow out letting observed. The culvert outlets into a small ravine that had travels south away from the property. It was observed that the ravine had approximately 3-4' high walls which indicates water levels have been high in this area previously.

Drainage within the schools fenced in play areas is directed away from the School. The western side of the school drains westerly to a point located along the south western corner of the site. Beyond the fenced play area slopes tend to drop off dramatically around the perimeter of the property.

Recommendations:

- Following a significant rain event, we would recommend observing the facilities to note any drainage issues within the campus. Additional catch basins and underdrain systems may be needed to facilitate proper drainage.
- Improvements to the roadway and parking network may require alterations to the existing stormdrain network.

- Catch basins in front of the Gilbert school and on Sunset Avenue appear to be built of brick and will potentially need to be upgraded in the future.

Utilities:

The site is serviced by a water main that generally follows the alignment of Townsend Street with a fire hydrant located on the northwest side of the intersection of Townsend Street and Sunset Avenue. The Sylvio J Gilbert Elementary School is served by a public sewer and outlets into a manhole located on Sunset Avenue and then runs southerly to a manhole located in the grassed play field to the east of the school. The main then leaves the site heading south towards Mount Vernon Avenue. The site is serviced by a gas main that enters along the western side of the building. Three-phase power comes from east side of Townsend Street to a transformer located to the east of the school. Services to the buildings appear to be provided via overhead lines that run along the south side of both buildings. In the northwest corner of the building there is a service area for the school. There is an access way off Sunset Avenue for vehicles to enter this service area. The solid waste disposal area for the school is also located within this accessway.

POTENTIAL FUTURE EXPANSION CONSTRAINTS:

The Department of Education previously suggested that elementary schools should be sited on a land area of 10 acres, plus 1 acre per 100 students. At approximately 19 acres of land area, this would limit the number of students to approximately 900 at the existing facility. Currently, Sylvio J Gilbert Elementary School serves 345 students. Enrollment projections would be needed to determine if and when a school expansion would be needed.

Onsite Expansion Potential:

Expansions of the school facility beyond the existing development footprint would be challenging as the wooded areas contain severe slopes and apparent drainages. To develop these areas would require a large amount of fill to level the area. Additionally, areas to be expanded within the LWCF Easement will need to obtain any necessary approvals and/or easement revisions for past and future improvements.

Resource Mapping:

The USDA soils mapping identifies the surficial soils on site as Hartland soils located throughout the entire site. The Hartland soils are typically well drained soils with a seasonally high water table. The soils are depicted on the Existing Conditions Plans included in Attachment 1.

Based on Maine Department of Inland Fisheries and Wildlife mapping, the site does not contain any essential habitats for threatened or endangered species. However, portions of land to the east and north appear to contain mapped wetlands which may limit the possibility of future expansions as wetlands have the potential to contain significant wildlife habitats.

To the Southeast of the school there is an approximate 36" CMP outlet which was observed to be flowing. The culvert outlets to a drainage area that travels south away from the property. Given the signs of erosion

present in the drainage area, further investigations may be warranted to determine if this is a regulated jurisdictional stream.

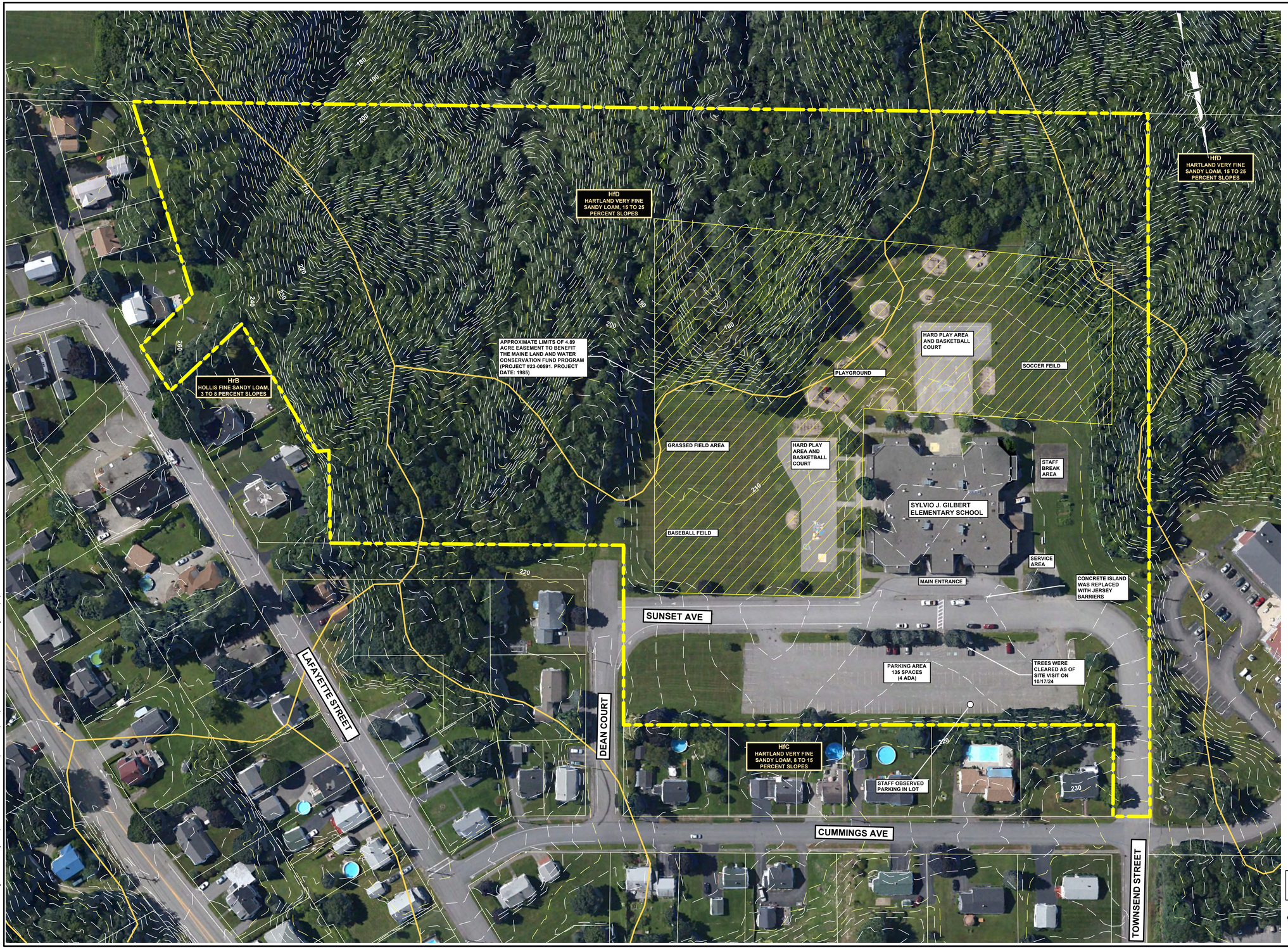
Recommendations:

- The combination of the potential stream and severe slopes make expanding the development footprint an unlikely option.
- Expanding amenities within the existing development footprint may require LWCF prior to construction.

Attachments:

Attachment 1 Existing Conditions Plan
Attachment 2 Drop-Off/Pick-Up Circulation Observations

ATTACHMENT 1
EXISTING CONDITIONS PLAN



NOTES:

1. PROPERTY LINE INFORMATION AND SITE AREA IS APPROXIMATE AND HAS BEEN PROVIDED BY THE CITY OF AUGUSTA GIS AND TAX MAP INFORMATION

2. CONCEPT PLAN PREPARED BASED ON LIMITED TOPOGRAPHIC AND BOUNDARY INFORMATION WHICH MAY REQUIRE MODIFICATIONS AS ADDITIONAL INFORMATION IS COLLECTED.

3. THE PROJECT SITE DOES NOT APPEAR TO BE LOCATED WITHIN A 100-YEAR FLOOD PLAIN.

LEGEND	
	PROJECT PARCEL
	ABUTTER PARCEL
	GIS CONTOUR
	EASEMENT
	SOIL BOUNDARY

NOTE: THIS PLAN SET IS ISSUED FOR INFORMATIONAL PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

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1 inch = 60 ft.

Rev.	Date	Revision
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Issued For	Date	By
–	–	–

Design: –	Draft: –	Date: SEPT 2024
Checked: –	Scale: 1"=60'	Job No.: 4365

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300 Southborough Drive - Suite 200
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Drawing Name: **Existing Conditions Plan**

Project: **Sylvio J. Gilbert Elementary School**
Augusta, Maine

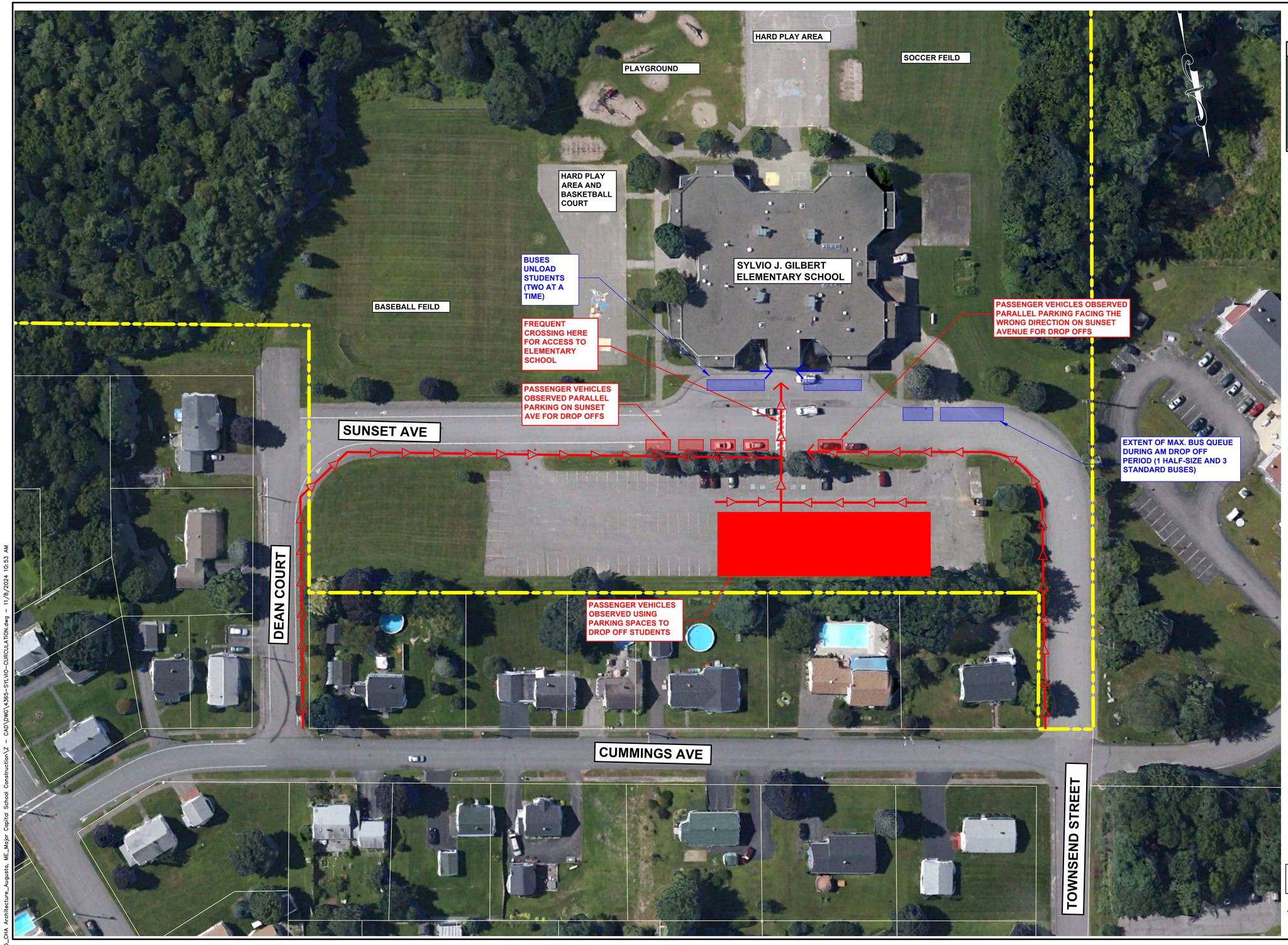
Client: **CHA Architecture, P.C.**
49 Dartmouth Street, Portland, ME 04101

Drawing No. *E1*

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ATTACHMENT 2

DROP-OFF/PICK-UP CIRCULATION OBSERVATIONS



LEGEND

- BUS QUEUING AREA
- PARENT QUEUING AREA
- PEDESTRIAN ROUTE FROM PARENT DROP OFF/PICK UP
- PEDESTRIAN ROUTE FROM BUS DROP OFF/PICK UP

NOTES:

1. THIS PLAN IS INTENDED TO DEPICT TRAFFIC CIRCULATION PATTERNS ON A CONCEPTUAL LEVEL BASED ON OBSERVATIONS CONDUCTED BY GORRILL PALMER ON OCTOBER 17, 2024.
2. SCHOOL HOURS EXTEND FROM 8:00 AM TO 2:40 PM.
3. MORNING DROP OFFS WERE OBSERVED FROM 7:30 AM TO 8:30 AM.

NOTE: THIS PLAN SET IS ISSUED FOR INFORMATIONAL PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

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1 inch = 40 ft.

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Issued For	Date	By
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Design: –	Draft: –	Date: SEPT 2024
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File Name: 4365-SYLVIO-CURCULATION.dwg		

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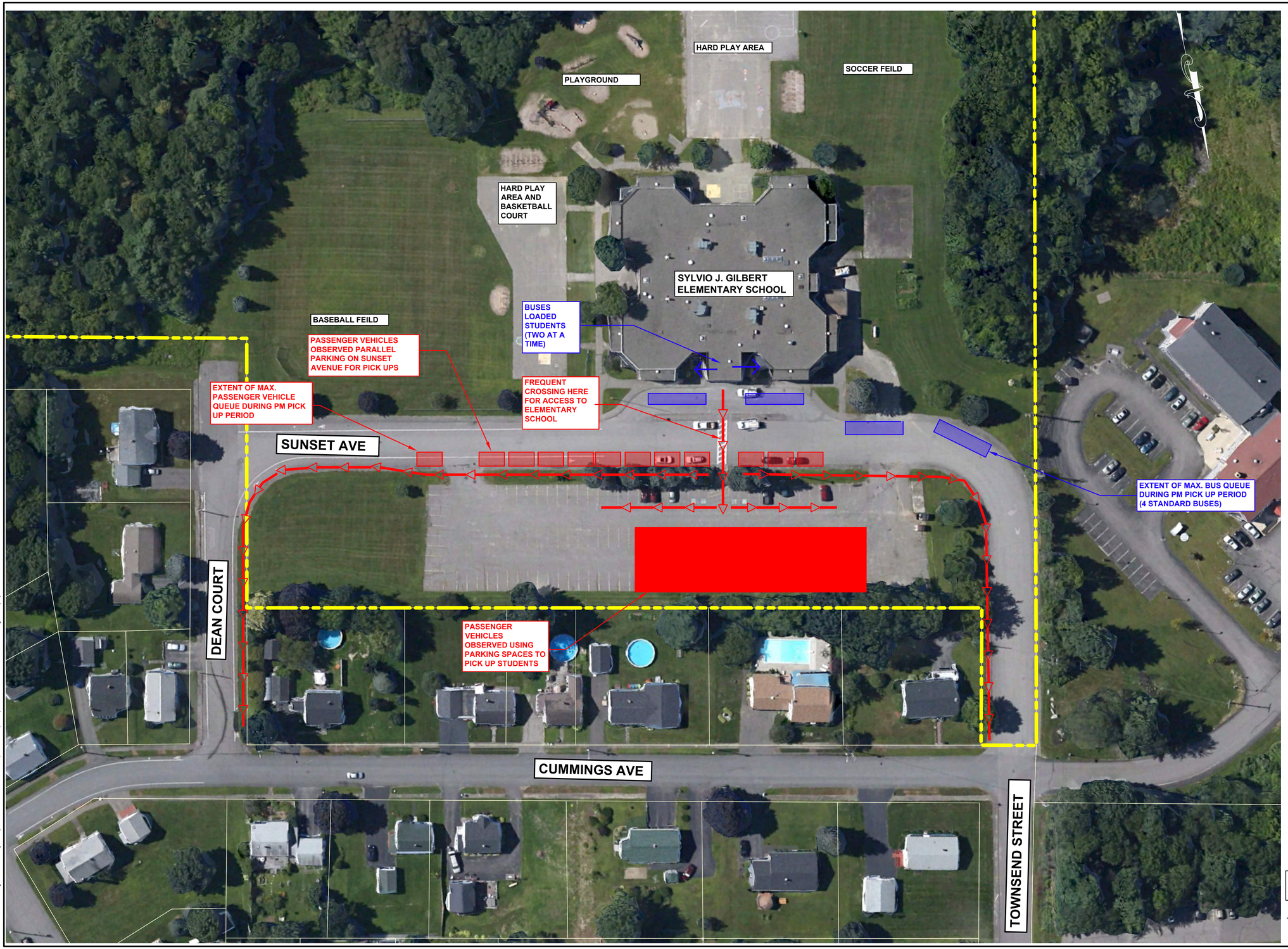
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300 Southborough Drive - Suite 200
South Portland, ME 04106

Drawing Name: **AM Drop Off Circulation Observations**

Project: **Sylvio J. Gilbert Elementary School**
Augusta, Maine

Client: **CHA Architecture, P.C.**
49 Dartmouth Street, Portland, ME 04101

Drawing No. *T1*



LEGEND

- BUS QUEUING AREA
- PARENT QUEUING AREA
- PEDESTRIAN ROUTE FROM PARENT DROP OFF/PICK UP
- PEDESTRIAN ROUTE FROM BUS DROP OFF/PICK UP

NOTES:

1. THIS PLAN IS INTENEDED TO DEPICT TRAFFIC CIRCULATION PATTERNS ON A CONCEPTUAL LEVEL BASED ON OBSERVATIONS CONDUCTED BY GORRILL PALMER ON OCTOBER 17, 2024.
2. SCHOOL HOURS EXTEND FROM 8:00 AM TO 2:40 PM.
3. AFTERNOON PICK UPS WERE OBSERVED FROM 2:35 PM TO 3:00 PM.

NOTE: THIS PLAN SET IS ISSUED FOR INFORMATIONAL PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

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1 inch = 40 ft.

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Design: –	Draft: –	Date: SEPT 2024
Checked: –	Scale: 1"=40'	Job No.: 4365

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(207) 772-2515
300 Southborough Drive - Suite 200
South Portland, ME 04106

Drawing Name: PM Drop Off Circulation Observation

Project: Sylvio J. Gilbert Elementary School
Augusta, Maine

Client: CHA Architecture, P.C.
49 Dartmouth Street, Portland, ME 04101

Drawing No. T2

GORRILL PALMER
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Site Facilities Assessment – Lincoln Elementary School

To:	**Robin Tannenbaum** **CHA Architecture, P.C.**	**From:**	**Douglas E. Reynolds, PE**
Date:	**November 8, 2024**	**Re:**	**Augusta Public Schools Facilities Assessment** **Lincoln Elementary School** **CHA Architecture, P.C.**

PROJECT BACKGROUND:

It is our understanding that the Maine Department of Education has requested a Facilities Assessment of Lincoln Elementary School which from a land use/site development perspective will focus on the following:

- The age and status of various systems and key infrastructure
- The size of the overall site and site features/amenities
- The ability of the site to accommodate expansion of the existing facility.

As requested by CHA Architecture, Gorrill Palmer has observed and evaluated the existing conditions during a typical day for the morning drop off and afternoon pick up at Lincoln Elementary School. The purpose of this memorandum is to provide observations and recommendations for the necessary site improvements for the existing Lincoln Elementary School to continue to serve the Augusta Public Schools community. For the purpose of this analysis, it was assumed that any improvements would need to accommodate continued use of the Lincoln Elementary School. Further analysis may be required to determine if the recommendations presented in this analysis would be feasible.

REFERENCES:

- Field reconnaissance by Gorrill Palmer on Tuesday October 8, 2024
- LiDAR topography from the Maine Office of GIS
- Soils mapping from the US Department of Agriculture database
- Wetlands mapping from the National Wetlands Inventory database
- Habitat mapping from the Maine Inland Fisheries and Wildlife database
- Lincoln Replacement School Plans dated June 22, 1987, and prepared by PDT Architects.

EXECUTIVE SUMMARY:

The Lincoln Elementary School facility features one large school building, parking lot for staff, a small bus loop, basketball court, play field, and playground. The facility is located in between a series of streets as depicted on the attached figures. For the purpose of this memorandum, Lincoln Street will be discussed as two different streets (east and west) since the roadway terminates at the school from both directions. Johnson Street runs perpendicular to West Lincoln Street along the western property line of the Lincoln Elementary School site, and provides access to the bus loop and staff parking lot. As such, Johnson Street was observed to be where the majority of the traffic is generated for the school. Bedford Street runs

perpendicular to Green Street and East Lincoln Street and abuts the east side of the school property line along the play field. Residential homes along Green Street separate the school from the roadway, which runs perpendicular to Johnson Street and Bedford Street to the north of the school. There is a speed bump located on Green Street before Green Street intersects with Johnson Street. An aerial map of the existing site is depicted on Drawing E1 following this narrative.

In general, site infrastructure and amenities are limited as summarized below. These recommendations are expanded upon further throughout this assessment.

- The site does not appear to provide adequate parking for staff and visitors.
- Outdoor play areas are limited given the student population.
- Pavement areas appeared to be deteriorating and may need to be repaired soon.
- Utilities appear to run underneath trees, making maintenance challenging.

The lot is only 3.8 acres in size and has limited space for improvements. Major improvements to parking and/or vehicular circulation would likely impact the already limited play areas.

EVALUATION OF KEY INFRASTRUCTURE:

Traffic Access:

Gorrill Palmer completed a site visit on Tuesday, October 8, 2024 to observe school operations at drop off and pick up times. During winter months, we would anticipate issues regarding traffic flow and pedestrian safety would be worsened by snow and ice. Findings from these visits are presented below.

Along the front of the building is a bus loop which has the capacity for approximately 3 buses. The staff parking lot abuts the bus loop and is served by a two-way access point on Johnson Street. The access drive within the parking lot also serves as the primary drop off location for passenger vehicles. There is an existing fire emergency access loop that connects East/West Lincoln Street and travels along the back side of the school. Though it was signed as a fire lane, several cars were observed entering from West Lincoln after dropping off a student and taking the loop around the back of the school to exit onto East Lincoln Street.

East/West Lincoln Street, Johnson Street, Green Street, and Bedford Street surround Lincoln Elementary School. While onsite, it was observed that all three streets are used during drop off/ pick up times. These streets primarily serve as access to the residential buildings in the neighborhood, as well as access to the Lincoln Elementary School, St. Michael School, and Western Ave (Route 11).

There are sidewalks and crosswalks that surround the site which allow pedestrian traffic to access the site as described below.

- From West Lincoln Street, pedestrians utilize the sidewalk on the north side of the road. Two crosswalks allow pedestrians to cross Johnson Street, then across West Lincoln Street to the school.
- From Johnson Street, pedestrians utilize the sidewalk on both sides of the road. On the East side of the road there is a crosswalk parallel to the road along each of the access ways into the school.
- From Green Street, pedestrians utilize the sidewalk on the north side of the road. A crosswalk at the intersection of Green Street and Bedford Street allows pedestrians to cross Green Street. Pedestrians then travel south on the Bedford Street sidewalk along the eastern property line of the school until the intersection of Bedford Street and East Lincoln Street.

- From East Lincoln Street, pedestrians utilize the sidewalk on the north side of the road and travel west towards Lincoln Elementary School. There is a gate to allow pedestrians to enter from the east side of the school. There is no delineated crosswalk for pedestrians crossing Bedford Street to continue along East Lincoln Street.

Recommendations

- The pavement for East School Street and portions of the staff parking lot appears to be cracked and deteriorating and may need to be repaired or reconstructed soon.
- Speed bumps may be warranted along Johnson Street to encourage slow moving traffic.
- Signage infrastructure on the campus could improve. A few examples are:
    - Additional crosswalk signage
    - Adding stop signs at each exit of the parking lot.
    - School zone signs with flashing lights

Traffic Circulation:

Gorrill Palmer completed a site visit on Tuesday, October 8, 2024 to observe school operations at drop off and pick up times. During winter months, we would anticipate issues regarding traffic flow and pedestrian safety would be worsened by snow and ice. Findings from these visits are presented below.

Morning Drop-Offs:

In general, the morning drop off period began at 7:45 am and most drop offs were completed by 8:25 am. Buses began arriving at 7:50 am and waited to drop students off at the elementary school until 8:00 am. Students were unloaded around 8:00 am which took approximately 5- 10 minutes. A total of six full size buses and one half-sized bus were observed, arriving at 5-minute intervals. Students who arrived early (before 7:55 a.m.) congregated in front of the school at the main entrances until 8:00 am when they were observed to enter. Observations are described in the AM Drop-Off Circulation Observations (Drawing T1) included in Attachment 2.

In general, morning traffic circulation was observed to be moderately congested as the site is constricted by the following:

- The site does not appear to provide any designated visitor parking, as such, drop offs occurred in several locations both on-site and off-site on side streets surrounding the site as described below. A total of 80 drop-offs were observed in the afternoon.:
    - The majority of passenger vehicle drop offs occurred by parking within the access aisle of the staff parking lot and walking students to the building. Vehicles accessed the parking lot using the northern entrance. During the busiest time, two passenger vehicles were observed queuing in the southbound travel lane of Johnson Street to turn left into the staff parking lot. Cars parked in this area were blocking staff from parking.
    - Multiple drop offs utilized parallel parking along Johnson Street. Pedestrians were observed crossing the street in various locations, to get to the sidewalk along the east side of the road instead of using the west sidewalk and crossing at the designated crosswalk.
    - Multiple drop offs utilized the parking/loading area of the U-Haul Self Storage Facility located adjacent to the Lincoln Elementary School on East Lincoln Street.
    - After the buses dropped off the students and left (approximately 8:15 am) several drop offs were observed at the intersection of West Lincoln and Johnson Street, where passenger

vehicles used the loop around the back of the school to exit onto East Lincoln Street. Vegetation at the intersection of this loop and East Lincoln Street limit the visibility of pedestrians coming from the U-Haul Lot. This vegetation may need to be trimmed back to improve visibility of pedestrians in the roadway.
    - Several vehicles stopped in the travel lanes of West Lincoln Street and dropped students off adjacent to the sidewalk on the north side of the roadway.
    - Pedestrians were noticed traveling to the school on East Lincoln Street, it is unknown if parents parked on Cushman Street located parallel to Johnson Street just further west or if students were traveling from a residence in the neighborhood.
- Buses utilized pickup/drop off loop located just north of Lincoln Elementary School. The loop is signed to prevent parents and visitors from using this loop. The loop appears to have enough space to allow 3 buses to queue without significantly impacting traffic. A 4th bus was observed queuing in this loop which blocked access to the emergency loop behind the building.
- Once the bus loop was fully occupied by buses, the flow of traffic was observed to be slightly restricted in this area and at the intersection of West Lincoln and Johnson Street. This creates an additional safety concern in the event that an emergency vehicle needs to access the site during the drop-off period.

Afternoon Pick-Ups:

Parents began arriving around 2:30 pm and buses began arriving in approximate intervals of 10 minutes at about 2:25 pm. Parents were observed leaving their cars and waiting around the exit in front of the elementary school for pick-ups. The afternoon pick-up period began at about 2:40 pm for parents & walkers prior to students loading onto buses. Most pick-ups were completed by approximately 3:00 pm however multiple parents and students remained at the school to use the playground afterwards. Observations are described in the PM Pick-Up Circulation Observations (Drawing T2) included in Attachment 2.

In general, afternoon traffic circulation was observed to be less congested as compared to the morning. The site is constricted by the following (please note some comments are the same as the AM Pickup comments):

- Lincoln Elementary School was observed to dismiss students as the school buses and parents arrived after 2:40 pm. It was observed that 2 buses arrived approximately every 10 minutes from 2:35 to 2:55 pm. With the staggered arrival of the buses, queueing did not appear to be an issue.
- The site does not appear to provide any designated visitor parking, as such, pick ups occurred in several locations both onsite and on side streets surrounding the site as described below. A total of 42 pick ups were observed in the afternoon.:
    - The U-Haul loading facility parking area was occupied completely with six cars parked. This area was occupied for most of the PM pickup time. A total of thirteen vehicles used this parking area.
    - Multiple pick ups utilized parallel parking along the west side of Johnson Street. Pedestrians were observed crossing the street in various locations, to get from the sidewalk along the east side of the road instead of using the designated crosswalk at the intersection of West Lincoln and Johnson Street. Several cars were observed parking in front of driveways, preventing residents from accessing or exiting their driveways.
    - Several pick ups parked on the east side of Johnson Street which is signed “no parking”.
    - Multiple pick ups parked within the access aisle of the staff parking lot. During the busiest time, this queue included 6 vehicles. Cars parked in this area appeared to block staff from exiting.

  - Several pick ups were observed at the intersection of West Lincoln and Johnson Street, where passenger vehicles used the loop around the back of the school to exit onto East Lincoln Street. Vegetation at the intersection of this loop and East Lincoln Street limit the visibility of pedestrians coming from the U-Haul Lot. This vegetation may need to be trimmed back to improve visibility of pedestrians in the roadway.
- An additional van referred to as the 'Micah van' was present during the afternoon pick up.

Recommendations

- Overall, the site circulation appears to be in need of modifications. The following are ways to improve safety and conform to basic school circulation principles including:
  - Providing additional signage/striping along the back loop of the school to not allow parents during pick up/drop off to use.
  - Clearing additional vegetation as there is a blind spot to the east of the school leaving the loop from the back of the school and turning right onto Lincoln East Street .
  - Separating bus, passenger vehicle, and pedestrian activities to promote safety and improve traffic flow.
  - Providing pedestrian access to the school entrances without needing to cross Johnson Street and East/West Lincoln Street.
  - Providing passenger vehicle circulation that is not interrupted by buses and staff parking. As a general practice, the two loops would be separated by a raised sidewalk that will allow pedestrians to access school entrances without entering travel lanes.
  - Based on site observations, we recommend traffic improvements be designed to accommodate 6 buses or maintain the staggered nature of bus arrivals.
  - Based on these observations we recommend traffic improvements be designed to improve the capacity for parent drop off/pickups to the greatest extent practicable up to 60 drop off spaces.

Conceptual improvements to the site are beyond the scope of this study. For the purpose of this analysis, it was assumed that any improvements would need to accommodate continued use of the Lincoln Elementary School. Further analysis may be required to determine if the recommendations presented in this analysis would be feasible.

Parking:

The Lincoln Elementary School appeared to provide a total of approximately 32 (2 ADA accessible stalls) spaces for staff in the one lot located off Johnson Street. There were no spaces designated as "visitor parking". It was observed that there were 7 school employees parked in the staff lot that were not in designated (painted) parking spaces. A total of 23 teachers were observed parking on the side of streets as described below.

- South side of West Lincoln Street – 8 staff vehicles
- West side of Johnson Street– 11 staff vehicles
- West side of Bedford Street – 1 staff vehicle
- North side of East Lincoln Street – 3 staff vehicles

To comply with the Americans with Disabilities Act (ADA), 1 ADA compliant space must be provided in parking lots with 1 to 25 spaces, and 2 ADA spaces for lots with 26 to 50 spaces. The main parking lot at the

Lincoln Elementary School appears to comply with ADA parking requirements. Further analysis may be warranted to determine if the ADA route meets ADA requirements (ie running and cross slopes and ramps).

According to the City Code, primary education Schools are required to provide 1 parking space for each adult employee. The required parking would be as follows based on information received from the School Department:

Use	Employees	Parking Requirement	Required Parking	Provided Parking
Lincoln Elementary	65	1 per Employee	65	32

As shown in the table above, the Lincoln Elementary parking lot appears to be 33 spaces below what is required by the City code.

Recommendations:

- Pavement along the bus loop appears to be in good condition however the staff parking lot is beginning to show signs of cracking and deterioration and may need to be repaved soon.
- Additional striping can be added in the staff parking lot to delineate additional spaces.
- Additional investigations may be warranted to determine if the existing facility meets ADA access route requirements.
- Provide parking lots with a minimum capacity of 65 parking spaces on site for the Lincoln Elementary School to meet the City code. This would require a reduction in the already limited space onsite for amenities.
- Additional investigations may be required to determine if the facility has adequate space to accommodate events at the school.

Permitting and Regulations:

Local Permitting and Regulations:

The parcel is identified as Lot 268 on Tax map 27 of the City Assessors Maps. This lot is in the RB-2 Zone where schools are a permitted principal use. Based on limited review of the Augusta City Charter, the existing use appears to generally comply with the City code.

A local site plan permit would also be required for any future improvements that involve a disturbance of land or construction or replacement of any new building or structure (including the addition of accessory structures) expansion of impervious surfaces more than 1 acre. Any future improvements will need to meet the requirements of the City Code. We recommend further review of the town code to be included in future phases as conceptual plan(s) are being developed.

State Permitting and Regulations:

The original Lincoln Elementary was constructed in 1988 and would not have been required to obtain a Stormwater Law Permit from the MaineDEP. After the enactment of the Stormwater Law in 1997, projects that disturb over 1 acre, or create over 1 acre of new impervious area after 1997 are required to obtain a Stormwater Law Permit. Based on available information, the existing impervious area on site would not count towards this threshold. If improvements disturb more than 1 acre of land, a Stormwater Law Permit-

By-Rule would need to be obtained. If improvements increase the impervious area beyond the 1-acre threshold, a more extensive Stormwater Law Permit will need to be obtained, which typically requires the implementation of additional stormwater management systems.

Developments that create over 3 acres of impervious area after 1975 are required to obtain a Site Law Permit from the MaineDEP. Based on aerial imagery, it appears the existing development is below this threshold with approximately 1.67 acres of impervious area. If any major improvements increase the impervious area on site beyond the 3-acre threshold, the project would be required to obtain a Site Law Permit in addition to the Stormwater Law Permit.

Recess and Athletics:

The play field abuts the northern end of the Lincoln Elementary property and is surrounded by an approximate 8' high chain link fence which surrounds the outdoor facilities for the Lincoln Elementary School. The play field appears to be in good condition. The playground is just south of the playing field and is comprised of several swing sets, slides, and obstacle courses with a wood chip base. The basketball court also located in the playground area appears to be in good condition with minimal cracking on the basketball court.

Recommendations:

- If the School Department anticipates additional hard or soft play areas would benefit the elementary school students, additional investigations may be required to develop potential locations for additional play areas.

Topography and Drainage:

The site has moderate slopes and is relatively flat in a few areas, however generally it is graded from the west to the east. Several areas around the perimeter of the building appear to have slopes that would indicate runoff drains towards the building in a few areas. It is anticipated that the grading on the south side of the building may create an ice hazard in the winter. A closed drainage system traverses the site staring at the west side of the school located in the staff parking lot and then heading East through the site and eventually to the municipal drainage system on East Lincoln Street.

A drainage swale is used around the playground in order to divert flow to a catch basin located on the eastern side of the playground. During the site visit on October 10th, this catch basin appeared to be full of sediment and other debris and may need to be cleaned out soon to maintain its function.

There is a culvert that runs west to east located under the faculty entrance to the Elementary School and it appears to be running under several trees to a manhole located along the eastern border of the property of the school. However, it could not be confirmed that the culvert runs to this manhole as there was a tree root covering half of the manhole preventing it from being opened.

Recommendations:

- Following a significant rain event, we would recommend observing the facilities to note any drainage issues within the campus. Additional catch basins and underdrain systems may be needed to facilitate proper drainage.

- The catch basin located just south of the basketball court within the fenced play areas has significant buildup of debris in its sump and appears to require maintenance.
- Manhole located beyond the school's fence and on the western side of East Lincoln Street, should cleared off to allow access to the manhole.
- The culvert that drains the swale on the western side of the grassed play field / play ground to the catch basin on the southeast corner of the playground facilities appears to be damaged and may need to be repaired/replaced soon.

Utilities:

The site is serviced by a water main that generally follows the alignment of Lincoln Street West which services the building.. There is also a hydrant located in the island within the bus loop. The site is also serviced by public sewer(gravity), which appears to run in an eastly direction in alignment with the general topography of the site. There was some debris in the sewer manhole located in front of the staff entrance that was observed which may need to be removed. Three-phase power comes from West Lincoln Street to a transformer adjacent to the dumpster area to service the building.

POTENTIAL FUTURE EXPANSION CONSTRAINTS:

The Department of Education previously suggested that elementary schools should be sited on a land area of 10 acres, plus 1 acre per 100 students. At approximately 3.8 acres of land area, the existing site would not be adequate to serve the existing school. Currently, Lincoln Elementary School serves 284 students which would require a 12.8 acre site. Enrollment projections would be needed to determine if and when a school expansion would be needed. Expanding the development footprint does not appear to be feasible since the parcel is already fully developed the surrounding neighborhood is also fully developed.

Resource Mapping:

The USDA soils mapping identifies the surficial soils on site as Suffield and Lamoine silt loam soils. The site is generally split between these soil types. Suffield soils are moderately well drained soils with moderate permeability. The Lamoine soils are somewhat poorly drained soils with low permeability. It appears from the original 'Lincoln Replacement School Plans' fill was used to elevate the site when the schools and fields were developed which may mitigate issues with underlying poorly drained soils. The USDA mapped soils are depicted on the Existing Conditions Plans included in Attachment 1.

Based on Maine Department of Inland Fisheries and Wildlife mapping, and U.S. Fish and Wildlife's National Wetland Inventory mapping, the site does not contain any essential habitats for threatened or endangered species.

The site does not appear to be located in a floodplain based on FEMA mapping.

Attachments:

Attachment 1 Existing Conditions Plan
Attachment 2 Drop-Off/Pick-Up Circulation Observations

ATTACHMENT 1
EXISTING CONDITIONS PLAN



NOTES:

1. PROPERTY LINE INFORMATION AND SITE AREA IS APPROXIMATE AND HAS BEEN PROVIDED BY THE CITY OF AUGUSTA GIS AND TAX MAP INFORMATION
2. PLAN PREPARED BASED ON LIMITED TOPOGRAPHIC AND BOUNDARY INFORMATION WHICH MAY REQUIRE MODIFICATIONS AS ADDITIONAL INFORMATION IS COLLECTED.
3. PLAN PREPARED WITH LIMITED COMMUNICATIONS WITH MUNICIPALITY WHICH MAY REQUIRE MODIFICATIONS AFTER REVIEW.
4. THE PROJECT SITE DOES NOT APPEAR TO BE LOCATED WITHIN A 100-YEAR FLOOD PLAIN.

LEGEND

- PROJECT PARCEL
- ABUTTER PARCEL
- GIS CONTOUR
- SOIL BOUNDARY

NOTE: THIS PLAN SET IS ISSUED FOR INFORMATIONAL PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

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1 inch = 40 ft.

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Design: –	Draft: –	Date: SEPT 2024
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South Portland, ME 04106

Drawing Name: **Existing Conditions Plan**

Project: **Lincoln Elementary School**
Augusta, Maine

Client: **CHA Architecture, P.C.**
49 Dartmouth Street, Portland, Maine 04101

Drawing No. *E1*

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ATTACHMENT 2

DROP-OFF/PICK-UP CIRCULATION OBSERVATIONS

PARENTS AND STUDENTS OBSERVED WALKING DOWN WEST LINCOLN STREET TOWARDS SCHOOL

EXTENT OF MAX. BUS QUEUE DURING A.M. DROPOFF PERIOD (4 BUSES)

PARENTS OBSERVED USING LOOP AROUND BACK OF SCHOOL

PASSENGER VEHICLES OBSERVED DROPPING OFF STUDENTS

TWO PASSENGER VEHICLES QUEING IN JOHNSON STREET WAITING TO GET INTO STAFF PARKING LOT FOR DROP OFF

HALF-SIZED BUS OBSERVED PARKING HERE

BUSES UNLOAD STUDENTS (TWO AT A TIME)

PEDESTRIANS CROSSING JOHNSON STREET NOT USING CROSSWALKS

MAIN ENTRY FOR ALL STUDENTS

MAIN ENTRANCE

FACULTY ENTRANCE

LINCOLN ELEMENTARY SCHOOL

ENTRANCE FOR FACULTY ONLY IN THE MORNING

EXTENT OF MAX. PASSENGER VEHICLE QUEUE DURING A.M. DROP OFF PERIOD (12 VEHICLES)

PASSENGER VEHICLES OBSERVED USING UHAUL PARKING AREA FOR DROP OFFS

STAFF OBSERVED PARKING HERE

WEST LINCOLN STREET

JOHNSON STREET

WESTERN AVE

GREEN STREET

BEDFORD STREET

EAST LINCOLN STREET

LEGEND

- BUS QUEUING AREA
- PARENT QUEUING AREA
- PEDESTRIAN ROUTE FROM PARENT DROP OFF/PICK UP
- PEDESTRIAN ROUTE FROM BUS DROP OFF/PICK UP

NOTES:

1. THIS PLAN IS INTENDED TO DEPICT TRAFFIC CIRCULATION PATTERNS ON A CONCEPTUAL LEVEL BASED ON OBSERVATIONS CONDUCTED BY GORRILL PALMER ON OCTOBER 8, 2024.
2. SCHOOL HOURS EXTEND FROM 8:00 AM TO 2:40 PM.
3. MORNING DROP OFFS WERE OBSERVED FROM 7:30 AM TO 8:30 AM.

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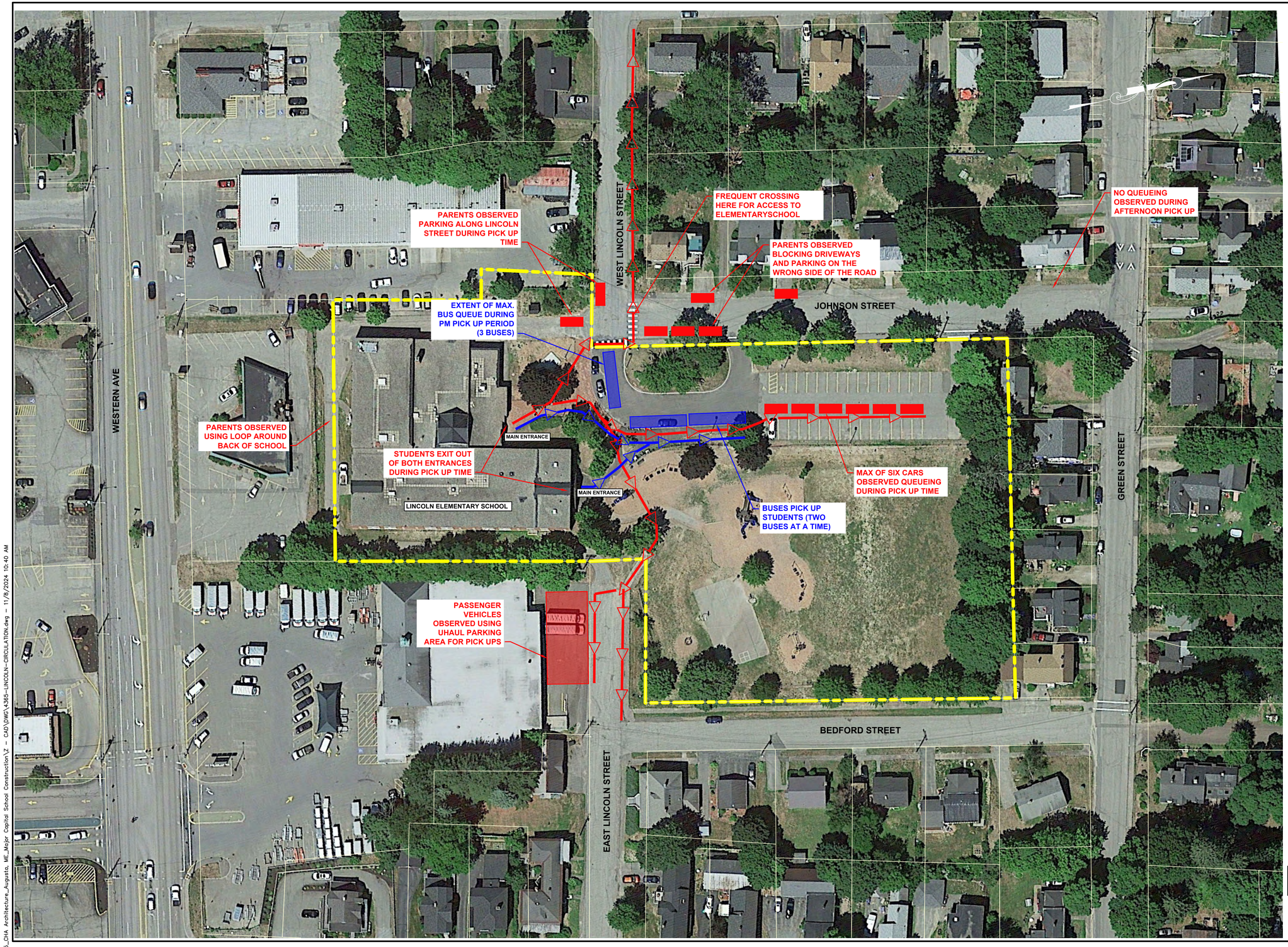
Drawing Name: **AM Drop Off Circulation Observations**

Project: **Lincoln Elementary School**
Augusta, Maine

Client: **CHA Architecture, P.C.**
49 Dartmouth Street, Portland, Maine 04101

Drawing No. *T1*

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LEGEND

- BUS QUEUING AREA
- PARENT QUEUING AREA
- PEDESTRIAN ROUTE FROM PARENT DROP OFF/PICK UP
- PEDESTRIAN ROUTE FROM BUS DROP OFF/PICK UP

NOTES:

1. THIS PLAN IS INTENDED TO DEPICT TRAFFIC CIRCULATION PATTERNS ON A CONCEPTUAL LEVEL BASED ON OBSERVATIONS CONDUCTED BY GORRILL PALMER ON OCTOBER 8, 2024.
2. SCHOOL HOURS EXTEND FROM 8:00 AM TO 2:40 PM.
3. AFTERNOON PICK UPS WERE OBSERVED FROM 2:10 PM TO 3:00 PM.
4. THE FIRST TWO BUSES LOADED PRIOR TO PASSENGER VEHICLES, THE SECOND ROUND OF BUSES ARRIVED AFTER THE MAJORITY OF PASSENGER VEHICLES HAD LEFT.

NOTE: THIS PLAN SET IS ISSUED FOR INFORMATIONAL PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

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South Portland, ME 04106

Drawing Name: PM Pick Up Circulation Observations

Project: Lincoln Elementary School
Augusta, Maine

Client: CHA Architecture, P.C.
49 Dartmouth Street, Portland, Maine 04101

Drawing No. T2

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GORRILL PALMER
An LJB Engineering Company

Site Facilities Assessment - Farrington Elementary School

To:	**Robin Tannenbaum** **CHA Architecture, P.C.**	**From:**	**Douglas E. Reynolds, PE**
Date:	**November 8, 2024**	**Re:**	**Augusta Public Schools Facilities Assessment** **Farrington Elementary School** **CHA Architecture, P.C.**

PROJECT BACKGROUND:

It is our understanding that the Maine Department of Education has requested a Facilities Assessment of Farrington Elementary School which from a land use/site development perspective will focus on the following:

- The age and status of various systems and key infrastructure
- The size of the overall site and site features/amenities
- The ability of the site to accommodate expansion of the existing facility.

As requested by CHA Architecture, Gorrill Palmer has observed and evaluated the existing conditions during a typical day for the morning drop off and afternoon pick up at Farrington Elementary School. The purpose of this memorandum is to provide observations and recommendations for the necessary site improvements for the existing Farrington Elementary School to continue to serve the Augusta Public Schools community. For the purpose of this analysis, it was assumed that any improvements would need to accommodate continued use of the Farrington Elementary School. Further analysis may be required to determine if the recommendations presented in this analysis would be feasible.

REFERENCES:

- Field reconnaissance by Gorrill Palmer on Wednesday October 16th, 2024
- LiDAR topography from the Maine Office of GIS
- Soils mapping from the US Department of Agriculture database
- Wetlands mapping from the National Wetlands Inventory database
- Habitat mapping from the Maine Inland Fisheries and Wildlife database
- Farrington Replacement School Plans dated June 25, 1987, and prepared by PDT Architects

EXECUTIVE SUMMARY:

The Farrington Elementary School facility is located on the north side of Eastern Avenue in Augusta as depicted on the attached figures. The facility features one large school building, a parking lot for staff and visitors, a primary drive that runs along the front of the building which was observed to be mainly used by buses and delivery vehicles, and an emergency access loop that surrounds the building which is used for passenger vehicle drop offs/pick ups. The facility also features a large playground complex, a hard play area with six basketball hoops, grassed play fields, a garden (Farrington Wildcat Garden), and a story walk (Farrington Trail). In total, the site is approximately 16 acres, with approximately 7 acres of the site being

undeveloped woodland/wetland area. An aerial map of the existing site is depicted on Drawings E1-E3 following this narrative.

In general, site infrastructure and amenities appear to meet the needs of the school. However, some key infrastructure components appear to be nearing the end of their life cycle as described below. These recommendations are expanded upon further throughout this assessment.

- Pavement areas and concrete curbing/sidewalk appeared to be deteriorating and may need repair.
- Barriers between the northern parking lot and Farrington Drive may be updated to improve the aesthetics of the facility
- Speed hump(s) may be warranted to encourage slow moving traffic

The combination of the story walk, steep slopes, and apparent bedrock make expanding the development footprint a challenge. Additional investigations would be warranted to determine if expanding the development footprint is feasible.

EVALUATION OF KEY INFRASTRUCTURE:

Traffic Access:

Eastern Avenue is a public street, which serves the school via Farrington Drive which appears to be a private drive. Sidewalk connects the school facility to the existing sidewalk along the north side of Eastern Avenue via the story walk (Farrington Trail) on the west side of the property. However, no sidewalk connection via Farrington Drive exists. A right turn lane exists along the north side of Eastern Avenue to allow westbound traffic to turn right into the school facility.

To the north of the parking lot entrance, the site utilizes one-way traffic which flows in a counterclockwise pattern for bus access to the front of the school and a separate passenger/emergency vehicle loop around the rear of the school. The primary drive (Farrington Drive) bisects the parking lot, providing access to the front of the school from the east and to the parking lot from both the east and west. Bus drop offs/pick ups occurred via the primary drive (Farrington Drive) with students entering and exiting at the main entrance at the south side of the school. Parent drop offs/pick ups occurred using the emergency loop that surrounds the school with students entering and exiting from the courtyard area on the north (rear) side of the school.

Recommendations

- The sidewalk along the front of the building consists of both concrete with monolithic curb and bituminous with granite curb. The bituminous portion of the sidewalk appears to be in good condition, however the concrete walkway and curb appears to be cracked and may need to be repaired soon.
- Though a sidewalk connection exists via the Farrington Trail, a sidewalk connecting the school to Eastern Avenue may be warranted.
- A speed hump may be warranted to encourage slow moving traffic.
- The southern portion of the parking lot was recently repaved. However, the remainder of the paved areas on site appear to be deteriorating, especially the following areas which may need to be repaired soon:
    - Emergency access loop/loading area along the west side of the building.
    - The portion of Farrington Drive south of the parking lot.
    - Northern portion of the parking lot.

Traffic Circulation:

Gorrill Palmer completed a site visit on Wednesday, October 16, 2024 to observe school operations at drop off and pick up times. During winter months, we would anticipate issues regarding traffic flow and pedestrian safety would be worsened by snow and ice. Findings from these visits are presented below.

Morning Drop-Offs:

In general, the morning drop off period began at 7:30 am and most drop offs were completed by 8:30 am. Parents began arriving at approximately 7:30 and buses began arriving at approximately 7:50 am. At 8:00 am, students were able to begin entering the school using the front (for buses) and rear (for passenger vehicles) entrances. A total of 67 passenger vehicle drop offs were observed via the emergency access loop and 3 were observed using the northern portion of the parking lot. A total of 6 standard size buses, and 3 half-sized buses were observed. The three half-sized buses parked at the front of the queue, and unloaded simultaneously. The regular sized buses generally unloaded one at a time behind the half-sized buses. The max queue lengths and other general observations are depicted on the AM Drop-Off Circulation Observations (Drawing T1) included in Attachment 2.

In general, morning traffic circulation was observed to be challenging as the site is constricted by the following:

- Parents queue using the emergency access loop behind the building. This creates an additional safety concern in the event that an emergency vehicle needs to access the site during the drop-off period.
- Staff using the southern portion of the lot had to cross Farrington Drive twice.
- Following the initial drop off at approximately 8:00 am, several empty buses were observed stopping on the side of Farrington Drive for 2-3 minutes to allow passenger vehicles to pass, however this blocked access to the southern portion of the parking lot (see Drawing T1).

Afternoon Pick-Ups:

In general, the afternoon pick up period began at 2:10 pm and most pick ups were completed by 3:00 pm. Parents began arriving at approximately 2:10 pm and buses began arriving at approximately 1:50 pm. At 2:40 pm, students were able to begin loading into buses and passenger vehicles using the front (for buses) and rear (for passenger vehicles) exits. A total of 31 passenger vehicle pick ups were observed via the emergency access loop. A total of 6 standard size buses, and 3 half-sized buses were observed. Buses arrived simultaneously and parked on both sides of Farrington Drive. One bus arrived after the first 8 buses left at approximately 2:55 pm. The max queue lengths and other general observations are depicted on the PM Pick-Up Circulation Observations (Drawing T2) included in Attachment 2.

In general, afternoon traffic circulation was observed to be challenging as the site is constricted by the following (please note some comments are the same as the AM. Pickup comments):

- Congestion in the morning was observed to be slightly less than the afternoon, despite the lower amount of pedestrian vehicle traffic. This is likely due to the fact that in the morning, students are able to gradually filter into the school allowing drop offs to be staggered. However, at the end of the day students are released in a more simultaneous manner. As a result, parents are simultaneously waiting for students to be released which creates a larger queue.

- Passenger vehicles that arrived early were not allowed to queue behind the building, which reduced the capacity of the access loop. A vehicle was observed obstruction traffic for approximately 1 minute before the queue was allowed to shift towards the back of the building.
- Parents queue using the emergency access loop behind the building. This creates an additional safety concern in the event that an emergency vehicle needs to access the site during the drop-off period.

Recommendations

- Overall, the site circulation does not appear to be in need of modifications, however the following are ways to improve safety and conform to basic school circulation principles including:
    - Separating bus, passenger vehicle, and pedestrian activities to promote safety and improve traffic flow.
    - Providing pedestrian access to the school entrances without needing to cross travel lanes;
    - Providing passenger vehicle circulation that is not interrupted by buses.
    - Separating passenger drop-off from bus routes, staff parking areas, and service entrances.
    - Providing a clear line of sight from the main entrance/admin office to the arriving vehicles.
    - Based on site observations, we recommend traffic improvements be designed to accommodate 9 buses.
    - Based on these observations we recommend traffic improvements be designed to improve the capacity for parent drop off/pickups to the greatest extent practicable up to 80 drop off spaces.

Conceptual improvements to the site are beyond the scope of this study. For the purpose of this analysis, it was assumed that any improvements would need to accommodate continued use of the Farrington Elementary School. Further analysis may be required to determine if the recommendations presented in this analysis would be feasible.

Parking:

The Farrington Elementary School appeared to provide a total of approximately 80 spaces (including 2 ADA accessible stalls) for staff and visitors. During school hours, approximately 17 (21%) of these spaces were observed to be empty.

To comply with the Americans with Disabilities Act (ADA), ADA compliant parking spaces must be provided for parking lots with 76 to 100 spaces. The parking lot at the Farrington School appears to only have 2 designated ADA spaces which does not comply with ADA requirements. The ADA route from the parking lot to the front of the building appeared to be clearly marked, however additional investigations may be warranted to determine if this route meets ADA requirements (ie. cross slopes, ramp slopes, trip hazards, etc.).

According to the City Ordinance, primary education Schools are required to provide 1 parking space for each adult employee. The required parking would be as follows based on information received from the School Department:

Use	Employees	Parking Requirement	Required Parking	Provided Parking
Farrington Elementary	62	1 per Employee	62	80

As shown in the table above, the Farrington Elementary parking lot appears to be 18 spaces above what is required by the town code.

Recommendations:

- Additional investigations may be warranted to evaluate the demand for ADA access and to create solutions to meet ADA parking space count and access route requirements.
- Provide signing to designate visitor parking spaces.
- Additional investigations may be required to determine if the facility has adequate space to accommodate events at the school.

Permitting and Regulations:

Local Permitting and Regulations:

The parcel is identified as Lot 12 on Tax map 59 of the Town Assessors Maps. This lot is in the BP (Institution/business/professional district) Zone, where schools are permitted principal use. Based on limited review of the Augusta City Ordinances, the existing use appears to generally comply with the City code.

A local site plan permit would also be required for any future improvements that involve a disturbance of land or construction or replacement of any new building or structure (including the addition of accessory structures) expansion of impervious surfaces more than 1 acre. Any future improvements will need to meet the requirements of the City Code. We recommend further review of the town code to be included in future phases as conceptual plan(s) are being developed.

State Permitting and Regulations:

The original Farrington Elementary appears to have been constructed in 1988 and would not have been required to obtain a Stormwater Law Permit from the MaineDEP. After the enactment of the Stormwater Law in 1997. Projects that disturb over 1 acre, or create over 1 acre of new impervious area after 1997 are required to obtain a Stormwater Law Permit. Based on available information, the existing impervious area on site would not count towards this threshold. If improvements disturb more than 1 acre of land, a Stormwater Law Permit-By-Rule would need to be obtained. If improvements increase the impervious area beyond the 1-acre threshold, a more extensive Stormwater Law Permit will need to be obtained, which typically requires the implementation of additional stormwater management systems.

Developments that create over 3 acres of impervious area after 1975 are required to obtain a Site Law Permit from the MaineDEP. Based on aerial imagery, it appears the existing development may exceed this threshold. If an existing Site Law Permit was obtained for the construction of this facility, any future improvements would need to comply with the conditions of the permit. Any major improvements would be required to obtain a letter of compliance, or an amendment to the original permit (if one exists). If no permit exists, an after-the-fact permit may be required.

Recess and Athletics:

To the north of the school building is a large (approximately 20,000 square-foot) woodchip playground area, a basketball court with 6 baskets, and grassed play fields. In addition, the emergency access loop and courtyard on the north side of the building also appear to serve as a hard play area. Apparent exposed

bedrock was observed on the north side of the building during field reconnaissance, which may limit options for potential expansions around the play areas behind the school. In addition, a small garden area (The Farrington Wildcat Garden) exists along the eastern property line, and a story walk (Farrington Trail) exists along the western property line. The garden area appears to be underutilized and in need of repair. Based on aerial imagery, it is unclear if the garden and/or story walk are located within the school's property.

Recommendations:

- If the School Department anticipates additional hard or soft play areas and equipment would benefit the students, additional investigations may be required to develop potential locations for additional play areas.
- If the School Department anticipates that the garden may benefit the students, it should be repaired and maintained on a regular basis.

Topography and Drainage:

In general, a drainage divide runs north to south through the middle of the site. Runoff from the eastern portion of the site flows to a large wetland complex. Runoff from the western portion of the site flows to the undeveloped wooded area to the west of the site. In general, runoff is directed away from the building, however along the northwest side of the building and within the courtyard, runoff appears to drain to a low point approximately 5' away from the face of the building. Ideally, runoff would be directed to a point further away from the building. However, what appeared to be exposed bedrock was observed on the north side of the building during field reconnaissance, which may limit options for potential drainage improvements. Runoff from the parking lot and Farrington Drive appears to drain to 2 catch basins, with the majority being directed to 1 central catch basin. The closed system discharges to the wetland complex to the east adjacent to the garden area. Additional investigations may be warranted to determine if the catch basin inlets have the capacity to handle larger storms without significant ponding. Additionally, the outlet of the closed system should be protected with riprap or other erosion preventing methods.

Roof drains for the school drain internally and appear to outlet to the wetland complex via an 8" pvc pipe on the northeast corner of the building. The end of the roof drain pipe appears to be cracked, which may be caused by the apparent limited cover as it crosses underneath the emergency access road. Additionally, the outlet of the closed system should be protected with riprap or other erosion preventing methods.

Recommendations:

- Following a significant rain event, we would recommend observing the facilities to note any drainage issues within the campus. Additional catch basins and underdrain systems may be needed to facilitate proper drainage. Additionally, the outlet of the closed system should be protected with riprap or other erosion preventing methods.
- The end of the roof drain pipe may need to be repaired. Additional investigations may be warranted to evaluate the condition of the pipe underneath the emergency access road to determine if additional cover is needed. Additionally, the outlet of the closed system should be protected with riprap or other erosion preventing methods.

Utilities:

The site is serviced by a water main that generally follows the alignment of the Farrington Trail to a hydrant located on the south side of Farrington Drive, west of the parking lot then to the southwest corner of the building. The site is also serviced by public sewer, which appears to run in a southerly direction along the Farrington Trail to Eastern Avenue. Three-phase power comes from Eastern Avenue, up the Farrington Trail where it is transferred to underground power to a transformer off the southwest corner of the building. Summit Natural Gas also appears to service the facility.

POTENTIAL FUTURE EXPANSION CONSTRAINTS:

The Department of Education previously suggested that elementary schools should be sited on a land area of 10 acres, plus 1 acre per 100 students. At approximately 16 acres of land area, this would limit the number of students to approximately 600 at the existing facility. Based on information received from the School Department, Farrington Elementary School serves 309 students. Enrollment projections would be needed to determine when a school expansion would be needed.

Onsite Expansion Potential:

Expansions of the school facility beyond the existing development footprint would be challenging given the presence of wetlands and apparent exposed bedrock. The Story Trail may also have an easement associated with the Story Trail which would likely limit expansion as well. The wooded area to the west of the Story Trail contains severe slopes which would require a large amount of fill to level the area.

Resource Mapping:

The USDA soils mapping identifies the surficial soils on site as Buxton, Lamoine, and Scantic soils with Lyman-Turnbridge soils located to the north and south of the site near a major stream. Much of the site is within the area mapped as Scantic soils. The Scantic soils are typically fine-grained poorly drained soils with a seasonally high water table. The Lamoine soils consist of somewhat poorly drained soils. The Buxton soils consist of moderately well drained soils. The poorly drained soils may also be compounded by the presence of bedrock which was observed in areas behind the school. The soils are depicted on the Existing Conditions Plans included in Attachment 1.

Based on Maine Department of Inland Fisheries and Wildlife mapping, and U.S. Fish and Wildlife's National Wetland Inventory mapping, the site does not contain any essential habitats for threatened or endangered species. However, a large wetland complex appears to exist on the east side of the site and beyond the property line. These wetlands are depicted on the Existing Conditions Plans included in Attachment 1.

The site does not appear to be located in a floodplain based on FEMA mapping.

Recommendations:

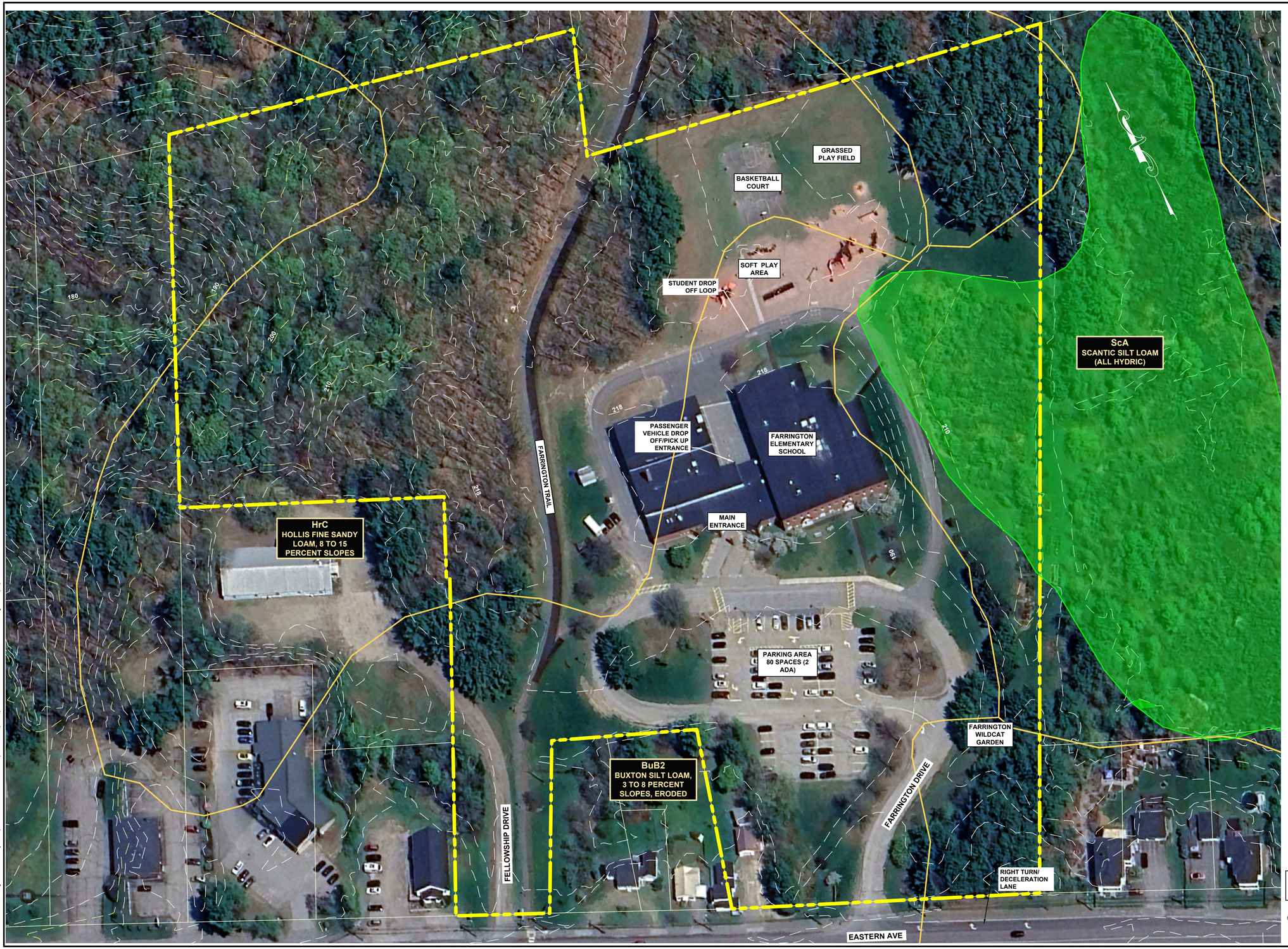
- If it is determined that expanding the elementary school facility would benefit the Department, additional investigations may be warranted to determine the extent of the wetland complex to the east, and to verify that land to the north and west do not contain wetlands.
- Investigations into easement restrictions associated with the Story Trail may be required for a future expansion.

- Bedrock investigations may be required to review the extent at which bedrock would be encountered with any potential future expansions.

Attachments:

Attachment 1 Existing Conditions Plan
Attachment 2 Drop-Off/Pick-Up Circulation Observations

ATTACHMENT 1
EXISTING CONDITIONS PLAN



NOTES:

1. PROPERTY LINE INFORMATION AND SITE AREA IS APPROXIMATE AND HAS BEEN PROVIDED BY THE CITY OF AUGUSTA GIS AND TAX MAP INFORMATION
2. PLAN PREPARED BASED ON LIMITED TOPOGRAPHIC AND BOUNDARY INFORMATION WHICH MAY REQUIRE MODIFICATIONS AS ADDITIONAL INFORMATION IS COLLECTED.
3. PLAN PREPARED WITH LIMITED COMMUNICATIONS WITH MUNICIPALITY WHICH MAY REQUIRE MODIFICATIONS AFTER REVIEW.
4. THE PROJECT SITE DOES NOT APPEAR TO BE LOCATED WITHIN A 100-YEAR FLOOD PLAIN.

LEGEND

- PROJECT PARCEL
- ABUTTER PARCEL
- GIS CONTOUR
- GIS WETLAND
- SOIL BOUNDARY

NOTE: THIS PLAN SET IS ISSUED FOR INFORMATIONAL PURPOSES AND SHALL NOT BE USED FOR CONSTRUCTION.

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1 inch = 50 ft.

Rev.	Date	Revision
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Issued For	Date	By
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Design: – | Draft: – | Date: SEPT 2024
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File Name: 4365-FARRINGTON-CIRCULATION.dwg

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GorrillPalmer.com
(207) 772-2515
300 Southborough Drive - Suite 200
South Portland, ME 04106

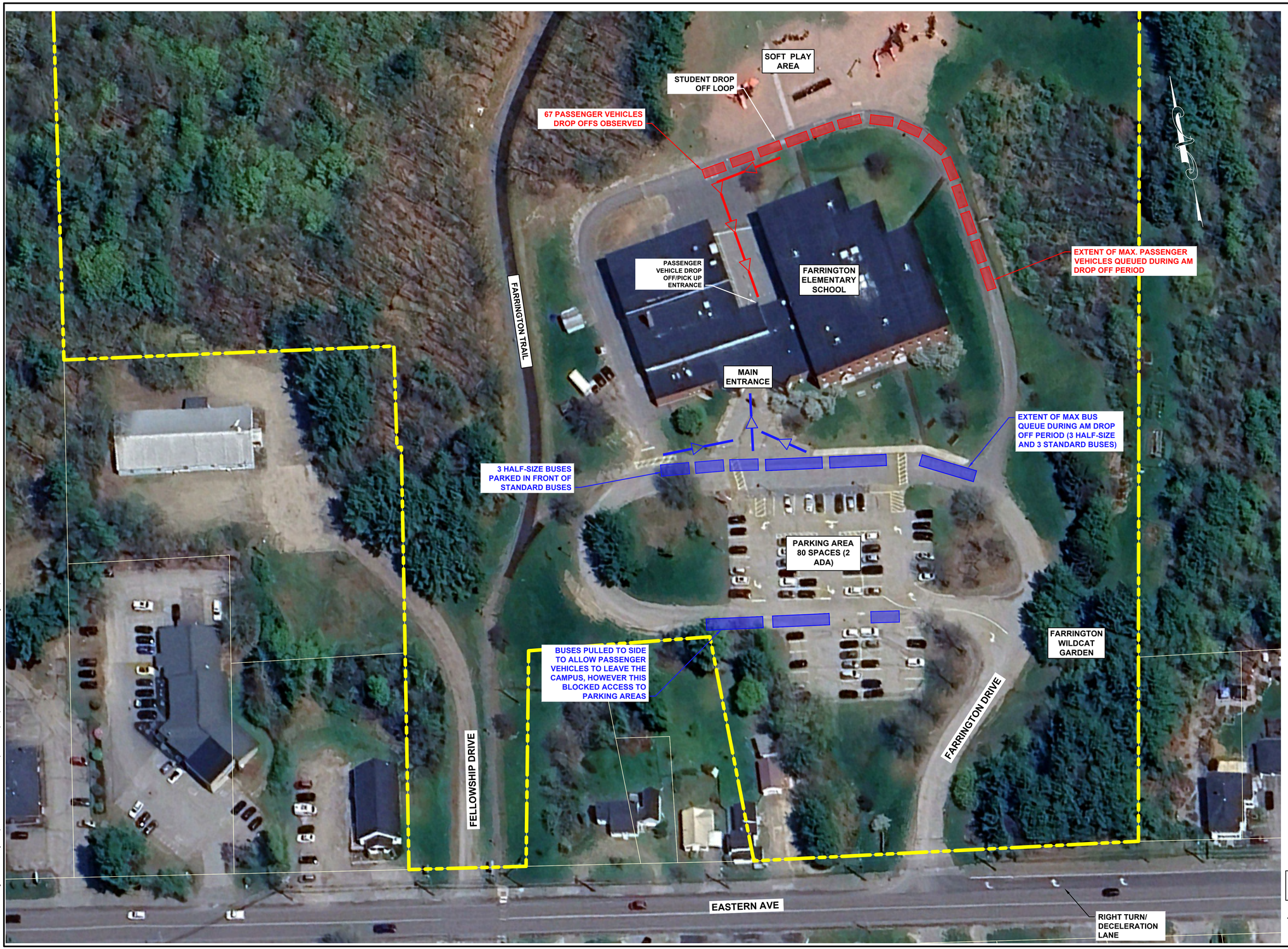
Drawing Name: **Existing Conditions Plan**
Project: **Farrington Elementary School**, Augusta, Maine
Client: **CHA Architecture, P.C.**, 49 Dartmouth Street, Portland, Maine 04101

Drawing No. *E1*

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ATTACHMENT 2

DROP-OFF/PICK-UP CIRCULATION OBSERVATIONS



LEGEND

- BUS QUEUING AREA
- PARENT QUEUING AREA
- PEDESTRIAN ROUTE FROM PARENT DROP OFF/PICK UP
- PEDESTRIAN ROUTE FROM BUS DROP OFF/PICK UP

NOTES:

1. THIS PLAN IS INTENDED TO DEPICT TRAFFIC CIRCULATION PATTERNS ON A CONCEPTUAL LEVEL BASED ON OBSERVATIONS CONDUCTED BY GORRILL PALMER ON OCTOBER 16, 2024.
2. SCHOOL HOURS EXTEND FROM 8:00 AM TO 2:40 PM.
3. MORNING DROP OFFS WERE OBSERVED FROM 7:30 AM TO 8:30 AM.

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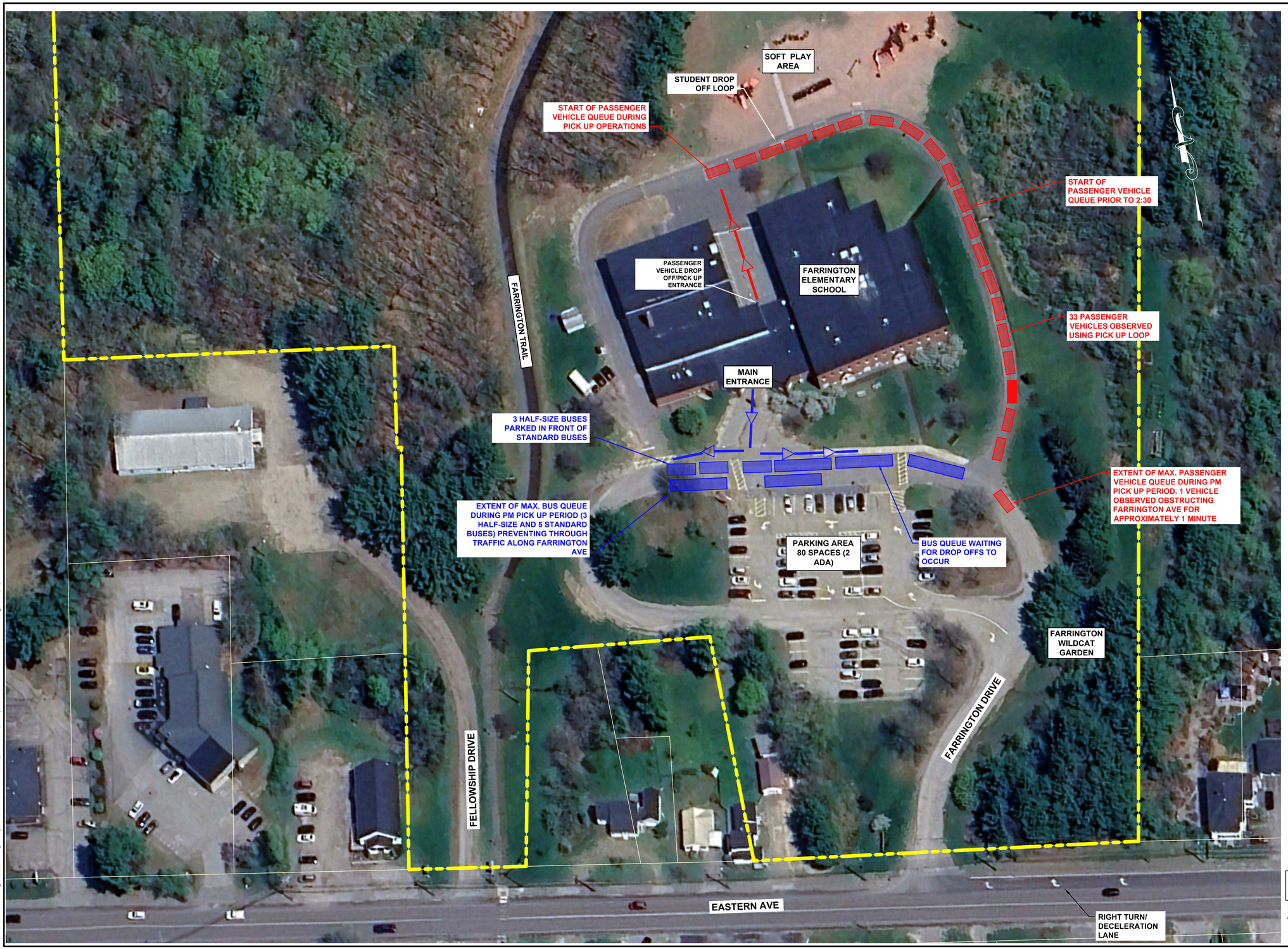
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Gorrill Palmer, an LJB Engineering Company
GorrillPalmer.com
(207) 772-2515
300 Southborough Drive - Suite 200
South Portland, ME 04106

Drawing Name: **AM Drop Off Circulation Observations**

Project: **Farrington Elementary School**
Augusta, Maine

Client: **CHA Architecture, P.C.**
49 Dartmouth Street, Portland, Maine 04101

Drawing No. *T1*



LEGEND

- BUS QUEUING AREA
- PARENT QUEUING AREA
- PEDESTRIAN ROUTE FROM PARENT DROP OFF/PICK UP
- PEDESTRIAN ROUTE FROM BUS DROP OFF/PICK UP

NOTES:

1. THIS PLAN IS INTENDED TO DEPICT TRAFFIC CIRCULATION PATTERNS ON A CONCEPTUAL LEVEL BASED ON OBSERVATIONS CONDUCTED BY GORRILL PALMER ON OCTOBER 16, 2024.
2. SCHOOL HOURS EXTEND FROM 8:00 AM TO 2:40 PM.
3. AFTERNOON PICK UPS WERE OBSERVED FROM 1:50 PM TO 3:00 PM

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Rev.	Date	Revision
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Issued For	Date	By
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Design: –	Draft: –	Date: SEPT 2024
Checked: –	Scale: 1"=40'	Job No.: 4365
File Name: 4365-FARRINGTON-CIRCULATION.dwg		

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(207) 772-2515
300 Southborough Drive - Suite 200
South Portland, ME 04106

Drawing Name: **PM Pick Up Circulation Observations**

Project: **Farrington Elementary School**
Augusta, Maine

Client: **CHA Architecture, P.C.**
49 Dartmouth Street, Portland, Maine 04101

Drawing No. T2

4.0 EDUCATIONAL DELIVERY AND ADEQUACY

4.1 Special Education

SPED population in ASD has increased rapidly in the last ten years and at 420 students is currently close to 20% of the population. The changes are in behavior, autism, academic needs, and are more severe than previously seen including an increasing number of students who need assistance with toileting and eating. Previously, SPED programs had been largely housed at Gilbert but in the past ten years as the population needing services has increased the district has made sure there are some programs at all schools. The district embraces an approach of trying to "push in" to support students in the General Education classroom but still uses a wide variety of SPED spaces for various needs.

SPED classrooms exist in all four elementary schools but there is only one at Hussey. If a Hussey student needs self-contained programming in functional skills or a behavior program, they attend one of the other elementary schools. Currently there are 25 students who leave their home district, Hussey, to receive services at a different location.

Hussey has one SPED room which is occupied by one teacher and two ed techs. Gilbert has three SPED rooms – two behavior rooms occupied by different grade levels and one special education classroom. Lincoln has four SPED rooms – two functional life skills rooms, a behavior room and a resource room. Farrington has five SPED rooms – two Functional Life Skills rooms, two Behavior Rooms and a Resource Room. 15 years ago the SPED classrooms were mainly located at Gilbert but as the population and extent of services needed has increased, the district has taken the approach of trying to provide SPED services to each student in their home district school.

4.2 Pre-K

The district's Pre-K program has been housed entirely at Gilbert for over a decade. There are three dedicated Pre-K classrooms on the ground floor. 96 students attend Pre-K in two half day sessions, resulting in an average of 16 students per class. PreK students eat in their own rooms but visit the library once a week and participate in all school activities. Speech services for Pre-K students are provided by CDS in an office near their classrooms which is shared with a social worker. Other services such as OT are offered in small rooms throughout the building, depending on availability.

4.3 English Speakers of Other Languages (ESOL)

The ESOL enrollment at Augusta schools has averaged around 144 students per year for the past five years. At the elementary school level these students are served in three classrooms at Farrington Elementary. ESOL enrollment has remained steady for the past five years but is known to be hard to plan for new enrollments due to families arriving at different times of the year. The Board has recently discussed reassessing the consolidated ESOL program and serving the ESOL population in their home district school.

4.4 Hussey Educational Environment

4.4.1.1 Hussey - Notable features of educational delivery

- Single-story building
- Shared gym/cafeteria which is undersized for both uses
- No art or music room
- Small toilet rooms in classrooms, non-ADA
- Irregular classroom shapes in addition

4.4.1.2 Hussey – Learning Environment Quality

- All regular classrooms have access to daylight.
- Storage is built into classrooms around perimeter.

4.4.1.3 Hussey – Educational Flexibility

- Bathroom/Entry Door/Storage zones between each set of classrooms make classroom reconfiguration impractical.

4.5 Gilbert Educational Environment

4.5.1.1 Gilbert - Notable features of educational delivery

- Shared cafeteria/gym
- All Pre-K is located at Gilbert (96 students)
- Three SPED Rooms
- Intervention Room + Intervention Pull out.
- CDS office to serve Pre-K Students
- No sprinkler system
- Only stair access to stage
- Library is a pass-through space.

4.5.1.2 Gilbert – Learning Environment Quality

- All regular classrooms have access to daylight.
- Library does not have access to daylight.
- Each classroom has two niches on exterior or room, one for toilets and one for storage and sinks.
- All classrooms have some combination of wall mounted white boards and bulletin boards.
- All classrooms have large, rolling, mounted screens to project from teacher laptops.

4.5.1.3 Gilbert Educational Flexibility

- Super structure is steel frame, steel columns, with some load bearing CMU
- Masonry infill at exterior walls – brick, insulation, air gap and CMU
- Interior CMU at non-load bearing locations - corridor walls and classroom entry niches, stairwells/elevator, gym,
- Walls between classrooms are non-load bearing steel studs and drywall except on ground floor where current Pre-K classrooms have turned operable partitions between rooms into permanent walls.
- While most walls in between classrooms could be reconfigured, the entry to each classroom is a CMU niche.

4.6 Lincoln Elementary School

4.6.1.1 Lincoln - Notable features of educational delivery

- Site is constant source of concern due to lack of on-site parking, unsafe conditions for staff and students getting to and from cars
- Administrative suite does not have a conference room
- Separate cafeteria and gym, although cafeteria is a pass-through space to gym and music.
- Playground area is owned by city and therefore accessible by the public at all times. There is limited opportunity to fence the playground to improve safety during school hours.

4.6.1.2 Lincoln – Learning Environment Quality

- All regular ed classrooms have access to daylight.

- Some special ed classrooms do not have access to daylight.
- Library, Art/Music do not have access to daylight.
- Good acoustic separation (no moveable partitions)
- All regular ed classrooms (and some others) have a niche inside the classroom entry door with built in storage and plumbing fixtures. These areas have dropped soffits.
- Some rooms have casework and/or sinks against partition walls.
- All classrooms have some combination of wall mounted white boards and bulletin boards.
- All classrooms have large, rolling, mounted screens to project from teacher laptops. Most rooms still have ceiling mounted projectors that are no longer used.

4.6.1.3 Lincoln – Educational Flexibility

- Super structure is steel frame, steel columns.
- Masonry infill at exterior walls – brick, insulation, air gap and CMU
- Interior CMU at non-load bearing locations - corridor walls and classroom entry niches, stairwells/elevator, gym,
- Walls between classrooms are non-load bearing steel studs and drywall.
- While walls in between classrooms could be reconfigured, the entry to each classroom is a CMU niche

4.7 Farrington Elementary School

4.7.1.1 Farrington – Notable features of educational delivery

- All ESOL is located at Farrington (170 students)
- Five SPED rooms
- Intervention room
- Only elementary school with separate art and music rooms
- Separate cafeteria and gym, although cafeteria is a pass-through space to gym and music.

4.7.1.2 Farrington – Learning Environment Quality

- All regular ed classrooms have access to daylight.
- Some special ed classrooms do not have access to daylight (FLS K-2).
- Library, Art, Music do not have access to daylight.
- Nurse suite does not have access to daylight.
- Good acoustic separation (no moveable partitions)
- All regular ed classrooms (and some others) have a niche inside the classroom entry door with built in storage and plumbing fixtures. These areas have dropped soffits.
- Some rooms have casework and/or sinks against partition walls.
- All classrooms have some combination of wall mounted white boards and bulletin boards.
- All classrooms have large, rolling, mounted screens to project from teacher laptops. Most rooms still have ceiling mounted projectors that are no longer used.

4.7.1.3 Farrington – Educational Flexibility

- Super structure is steel frame, steel columns.
- Masonry infill at exterior walls – brick, insulation, air gap and CMU
- Interior CMU at non-load bearing locations - corridor walls and classroom entry niches, stairwells/elevator, gym,
- Walls between classrooms are non-load bearing steel studs and drywall.
- While walls in between classrooms could be reconfigured, the entry to each classroom is a CMU niche.
- The original Farrington drawings showed an alternate classroom on floor two. It was built. The Farrington plan leaves room for a four-classroom addition in the NE corner of the building.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The Design Team finds that the conditions reported in the 2017-2018 funding applications for Hussey Elementary remain largely unchanged with the exception of improvements in mechanical ventilation and the addition of the heat pumps, largely funded through COVID related funding. The fundamental structures and service systems are past their serviceable life for education facilities.

An analysis of the Cony MS/HS complex shows that the building is not able to absorb the 6th grade due to the existing classrooms being highly utilized. A minimum of six additional classrooms would be needed and the district would need to address concerns such as expanding the now 7-12 FLS program to include 6th graders and how to add a fifth lunch period or integrate a new class in one of the existing four lunches, which were themselves created to alleviate overcrowding with three lunches. While accommodating the 6th grade in the building poses challenges, there has also been discussion about the positive benefits of housing grades 6-8 together to create an identifiable and cohesive middle school that was lost when the Augusta closed their middle schools and absorbed those grades into Cony and the elementary schools.

The three additional Augusta elementary schools reviewed in this study are all running at near capacity, given the ASD's stated goal of limiting elementary school classroom sizes to 22 students per class.

Each of the buildings has its own set of challenges when considering renovations or additions. An addition to any of the three would need to be constructed as a separate building with a fire wall between the original building and addition, to avoid triggering building code and life safety code Level Three upgrades that an expanded footprint might create.

Gilbert:

- "Clover leaf" floor plan does not allow for an obvious extension of a classroom wing or addition off a transition point.
- The large L-shaped flat area that surrounds the school is under a 6F encumbrance which limits the buildable portion of the site to the school itself. Should this site be identified as a candidate for addition/renovation, the feasibility of trading a portion of the 6F area in order to free up potential developable land adjacent to the existing school will need to be explored.

Lincoln:

- School building is one road width away from the property line on three sides and the fourth side is an undersized parking lot and bus loop and an adjacent park which is owned by the city. There is no room for expansion at this site.

Farrington:

- There is a designated spot for a four-classroom addition but the existing ground at the location is wet and very close to known wetlands.

- Additional flat area immediately adjacent to the cafeteria and gym are currently utilized as outdoor recreation space and for parent picks up and drop offs. ASD should explore alternative circulation patterns and space for recreation to take advantage of potential expansion adjacent to the existing building.

Other:

- Enrollment is expected to remain level over the next ten years, given increasing ESOL population and approved housing projects in the City of Augusta.
- The district would like to expand access to a full day Pre-K as well as plan ahead for the incorporation of 3- and 4-year-old programming.
- While not currently a primary focus, there is interest in preparing for a birth to three-year-old program in the next ten years.

Recommendations and Next Steps:

- Re-Loading Studies: Options for reloading the existing schools to best offer 3 and 4 yo programming, universal, full-day PreK, and rebalancing ESOL programming and Special Education across the district while addressing the replacement of ageing building(s.)
- Middle School: Options should be explored to rectify the separation of 6th grade from the middle school learning environment that happened when the district made the sound decision to close their aging middle schools.
- Adjacent Parcel Availability: Preliminary site explorations to understand ownership and viability of property adjacent to the Cony complex and Farrington.
- Site Research: As part of any upcoming site search/site selection scope, viability of 6F conversion at the Gilbert site should be explored as well as feasibility of re-routing site circulation at Farrington to allow for expansion at existing building.

LIST OF APPENDIXES

Appendix A **Enrollment Data**
Appendix B **Building Plans**
Appendix C **Building SF Spreadsheet: Existing v. DOE**
Appendix D **District Goals**

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APPENDIX A

Enrollment Data:

- October 1, 2024 Data
- NESDEC Report

Augusta School Department - October 1st School Enrollment - 4 year history

Projected Enrollment - FY 2025

	PreK	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
Farrington		45	41	53	44	42	38	47							310
Gilbert	80	30	28	30	27	37	34	43							309
Hussey		30	29	32	31	37	30	43							232
Lincoln		45	42	39	41	42	34	47							290
Cony MS									163	159					322
Cony HS											168	172	176	171	687
Total	80	150	140	154	143	158	136	180	163	159	168	172	176	171	**2150**

Total Grades PreK - 6: 1141
Total Grades 7 - 8: 322 **Increase/Decrease:** (10)
Total Grades 9 - 12: 687
Total CATC: 350 **CATC Inc/Dec:** 1

Student Enrollment - FY 2024

	PreK	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
Farrington		41	53	44	42	38	47	41							306
Gilbert	78	28	30	27	37	34	43	40							317
Hussey		29	32	31	37	30	43	40							242
Lincoln		42	39	41	42	34	47	42							287
Cony MS									159	168					327
Cony HS											172	176	171	162	681
Total	78	140	154	143	158	136	180	163	159	168	172	176	171	162	**2160**

Total Grades PreK - 6: 1152
Total Grades 7 - 8: 327 **Increase/Decrease:** (153)
Total Grades 9 - 12: 681
Total CATC: 349 **CATC Inc/Dec:** (57)

Student Enrollment - FY 2023

	PreK	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
Farrington		44	47	40	39	46	33	38							287
Gilbert	72	28	28	33	32	46	33	37							309
Hussey		31	29	34	30	44	38	40							246
Lincoln		39	45	39	34	43	42	40							282
Cony MS									157	147					304
Cony HS											170	174	267	274	885
Total	72	142	149	146	135	179	146	155	157	147	170	174	267	274	**2313**

Total Grades PreK - 6: 1124
Total Grades 7 - 8: 304 **Increase/Decrease:** 86
Total Grades 9 - 12: 885
Total CATC: 406 **CATC Inc/Dec:** 3

Student Enrollment - FY 2022

	PreK	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
Farrington		42	36	41	41	41	34	39							274
Gilbert	71	28	31	26	41	31	36	39							303
Hussey		26	35	34	42	34	33	36							240
Lincoln		43	38	35	40	39	39	41							275
Cony MS									147	147					294
Cony HS											167	153	262	259	841
Total	71	139	140	136	164	145	142	155	147	147	167	153	262	259	**2227**

Total Grades PreK - 6: 1092
Total Grades 7 - 8: 294
Total Grades 9 - 12: 841
Total CATC: 403



Augusta Public Schools
Augusta, Maine

School Year 2023-24 Enrollment Projection Report

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Table of Contents

Section	Page
Enrollment Summary	1
Historical Enrollment Table	2
Historical Enrollment Graph	3
Projected Enrollment Table	4
Projected Enrollment Graph	5
Historical & Projected Enrollment Graph	6
Historical & Projected Enrollment in Grade Combinations Line Graph	7
Historical & Projected Enrollment in Grade Combinations Stacked Column Graph	8
Birth to Kindergarten Relationship Graph	9
Additional Information	10
New England's PK-12 Enrollment Trends	11
Methodology, Reliability and Use of this Document	12

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Enrollment Summary

NESDEC is pleased to send you this report displaying the past, present, and projected enrollments for your District. It is important to update enrollment projections every year to identify changes in enrollment patterns. Ten-year projections are designed to provide your District with yearly, up-to-date enrollment information that can be used by boards and administrators for effective planning and allocation of resources.

Included in this report are graphs representing historical and projected grade-by-grade enrollments, as well as historical and projected enrollments in grade combinations. We received the enrollment data from the District, and we assume that the method of collecting this data has been consistent from year to year.

Enrollment projections are more reliable in Years #1-4 in the future and less reliable in the "out-years." Projections six to ten years out may serve as a guide to future enrollments and are useful for planning purposes. In light of this, NESDEC has added a "Spring Update Refresher" enrollment projection at no cost to affiliates. For more information, please refer to the Methodology, Reliability and Use of this Document section.

This is the first projection for Augusta Maine. Next fall, we can determine the accuracy of NESDEC's projection for SY 2024-25.

Births decreased by 25 from a previous ten-year average of 211 to a projected average of 186. In most districts, Grades 1-8 are very stable in enrollments. However, there have been decreases in 5 of the 8 most recent years, leading to a net decrease averaging 16 students per year.

Over the next three years, Grades K-6 enrollments are projected to decrease by 82 students, Grades 7-8 enrollments are projected to decrease by 12 students, and Grades 9-12 enrollments are projected to increase by 25 students, as students move through the grades.

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Historical Enrollment

School District: Augusta, ME **6/25/2024**

Historical Enrollment By Grade																			
Birth Year	Births*	School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2008	183	**2013-14**	91	175	175	174	150	155	159	147	156	160	158	167	196	192	0	2164	2255
2009	249	**2014-15**	80	167	168	184	166	152	166	157	153	151	189	159	164	195	0	2171	2251
2010	224	**2015-16**	97	177	174	168	184	161	152	175	161	146	178	181	157	175	0	2189	2286
2011	236	**2016-17**	94	165	166	168	171	177	166	145	172	160	156	168	173	145	0	2132	2226
2012	220	**2017-18**	85	180	166	172	164	167	180	163	154	169	181	151	182	176	0	2205	2290
2013	200	**2018-19**	83	175	179	170	166	156	160	167	159	149	162	179	156	182	0	2160	2243
2014	223	**2019-20**	96	179	176	179	171	163	161	160	177	159	165	161	177	144	0	2172	2268
2015	181	**2020-21**	48	163	166	161	159	168	163	159	156	167	171	162	150	175	0	2120	2168
2016	200	**2021-22**	78	151	157	144	176	151	158	162	152	152	174	166	158	154	0	2055	2133
2017	193	**2022-23**	81	159	158	158	143	187	158	164	168	152	177	180	167	162	0	2133	2214
2018	191	**2023-24**	78	140	154	143	158	136	180	163	159	168	172	176	171	162	0	2082	2160

*Birth data provided by Public Health Vital Records Departments in each state.

** < 10 Not reported, to protect subgroups with fewer than 10 students.

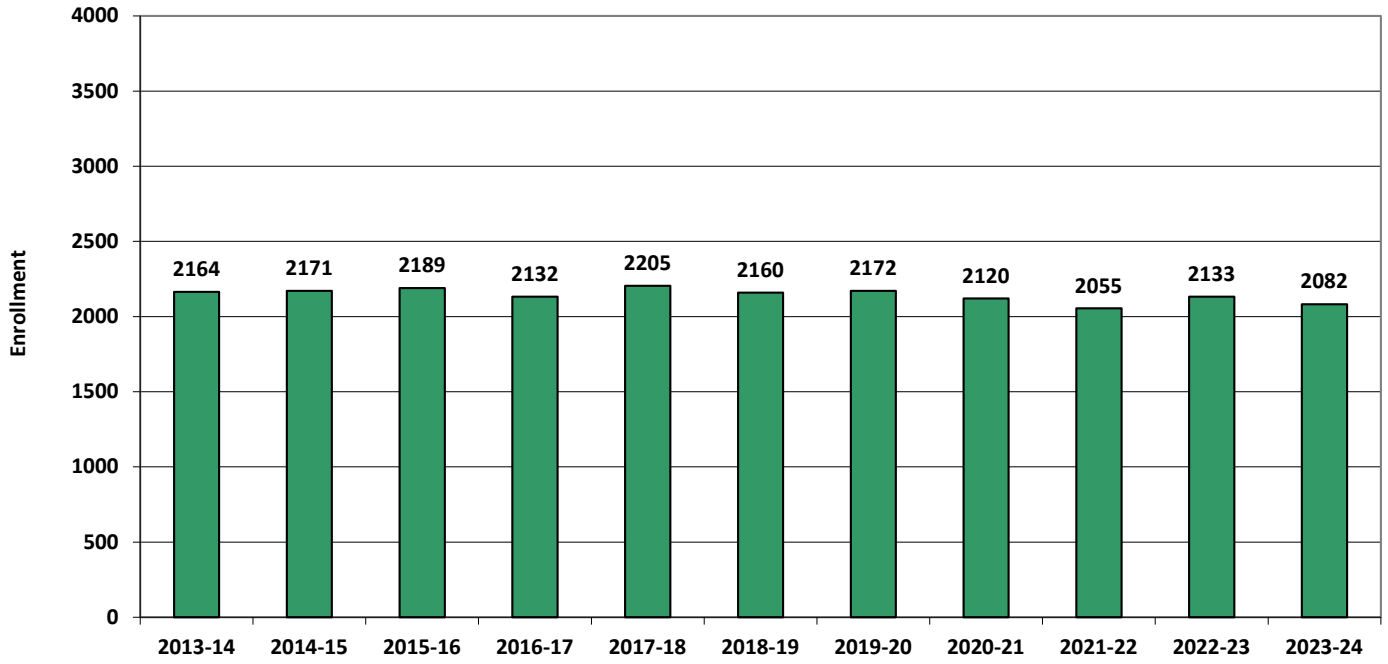
Historical Enrollment in Grade Combinations									
School Year	PK-6	K-6	PK-8	K-8	5-8	6-8	7-8	7-12	9-12
2013-14	1226	1135	1542	1451	622	463	316	1029	713
2014-15	1240	1160	1544	1464	627	461	304	1011	707
2015-16	1288	1191	1595	1498	634	482	307	998	691
2016-17	1252	1158	1584	1490	643	477	332	974	642
2017-18	1277	1192	1600	1515	666	486	323	1013	690
2018-19	1256	1173	1564	1481	635	475	308	987	679
2019-20	1285	1189	1621	1525	657	496	336	983	647
2020-21	1187	1139	1510	1462	645	482	323	981	658
2021-22	1177	1099	1481	1403	624	466	304	956	652
2022-23	1208	1127	1528	1447	642	484	320	1006	686
2023-24	1152	1074	1479	1401	670	490	327	1008	681

Historical Percentage Changes			
School Year	K-12	Diff.	%
2013-14	2164		
2014-15	2171	7	0.3%
2015-16	2189	18	0.8%
2016-17	2132	-57	-2.6%
2017-18	2205	73	3.4%
2018-19	2160	-45	-2.0%
2019-20	2172	12	0.6%
2020-21	2120	-52	-2.4%
2021-22	2055	-65	-3.1%
2022-23	2133	78	3.8%
2023-24	2082	-51	-2.4%
Change		**-82**	**-3.8%**

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Historical Enrollment

Grades K-12, School Years 2013-14 to 2023-24



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Projected Enrollment

School District: Augusta, ME **6/25/2024**

Enrollment Projections By Grade*																				
Birth Year	Births*		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2018	191		2023-24	78	140	154	143	158	136	180	163	159	168	172	176	171	162	0	2082	2160
2019	188		2024-25	78	147	139	143	146	156	134	184	161	158	187	172	172	172	0	2071	2149
2020	183		2025-26	78	143	146	129	146	144	153	137	182	160	176	187	168	173	0	2044	2122
2021	182		2026-27	78	142	142	135	131	144	142	156	135	180	178	176	183	169	0	2013	2091
2022	189	0	2027-28	78	147	141	132	137	129	142	145	154	134	200	178	172	184	0	1995	2073
2023	187	(est.)	2028-29	77	146	146	131	134	135	127	145	143	153	149	200	174	173	0	1956	2033
2024	186	(est.)	2029-30	77	145	145	135	133	132	133	130	143	142	170	149	195	175	0	1927	2004
2025	185	(est.)	2030-31	77	145	144	134	137	131	130	136	128	142	158	170	146	196	0	1897	1974
2026	186	(est.)	2031-32	77	145	144	133	136	135	129	133	134	127	158	158	166	147	0	1845	1922
2027	186	(est.)	2032-33	77	145	144	133	135	134	133	132	131	133	141	158	154	167	0	1840	1917
2028	186	(est.)	2033-34	77	145	144	133	135	133	132	136	130	130	148	141	154	155	0	1816	1893

Note: Ungraded students (UNGR) often are high school students whose anticipated years of graduation are unknown, or students with special needs - UNGR not included in Grade Combinations for 7-12, 9-12, etc.

Based on an estimate of births | Based on children already born | Based on students already enrolled

*Birth data provided by Public Health Vital Records Departments in each state.

** < 10 Not reported, to protect subgroups with fewer than 10 students.

Projected Enrollment in Grade Combinations*									
School Year	PK-6	K-6	PK-8	K-8	5-8	6-8	7-8	7-12	9-12
2023-24	1152	1074	1479	1401	670	490	327	1008	681
2024-25	1127	1049	1446	1368	637	503	319	1022	703
2025-26	1076	998	1418	1340	632	479	342	1046	704
2026-27	1070	992	1385	1307	613	471	315	1021	706
2027-28	1051	973	1339	1261	575	433	288	1022	734
2028-29	1041	964	1337	1260	568	441	296	992	696
2029-30	1030	953	1315	1238	548	415	285	974	689
2030-31	1034	957	1304	1227	536	406	270	940	670
2031-32	1032	955	1293	1216	523	394	261	890	629
2032-33	1033	956	1297	1220	529	396	264	884	620
2033-34	1035	958	1295	1218	528	396	260	858	598

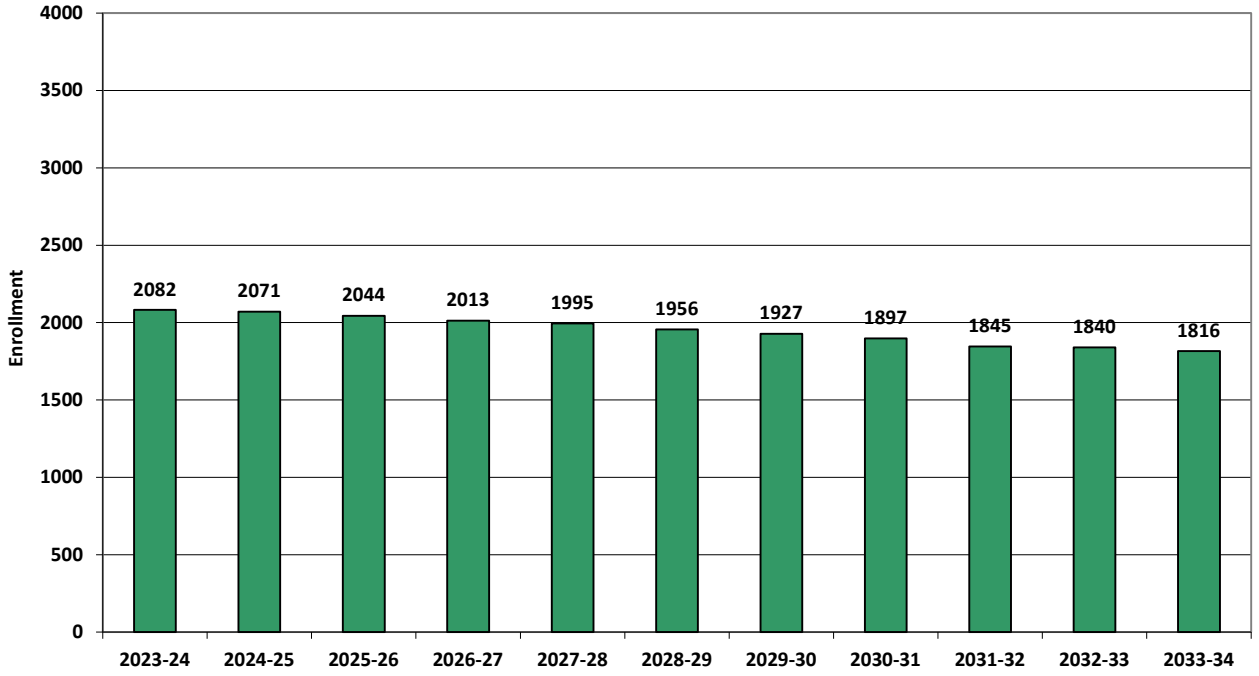
Projected Percentage Changes			
School Year	K-12	Diff.	%
2023-24	2082		
2024-25	2071	-11	-0.5%
2025-26	2044	-27	-1.3%
2026-27	2013	-31	-1.5%
2027-28	1995	-18	-0.9%
2028-29	1956	-39	-2.0%
2029-30	1927	-29	-1.5%
2030-31	1897	-30	-1.6%
2031-32	1845	-52	-2.7%
2032-33	1840	-5	-0.3%
2033-34	1816	-24	-1.3%
Change		-266	-12.8%

*Projections should be updated annually to reflect changes in in/out-migration of families, real estate sales, residential construction, births, and similar factors.

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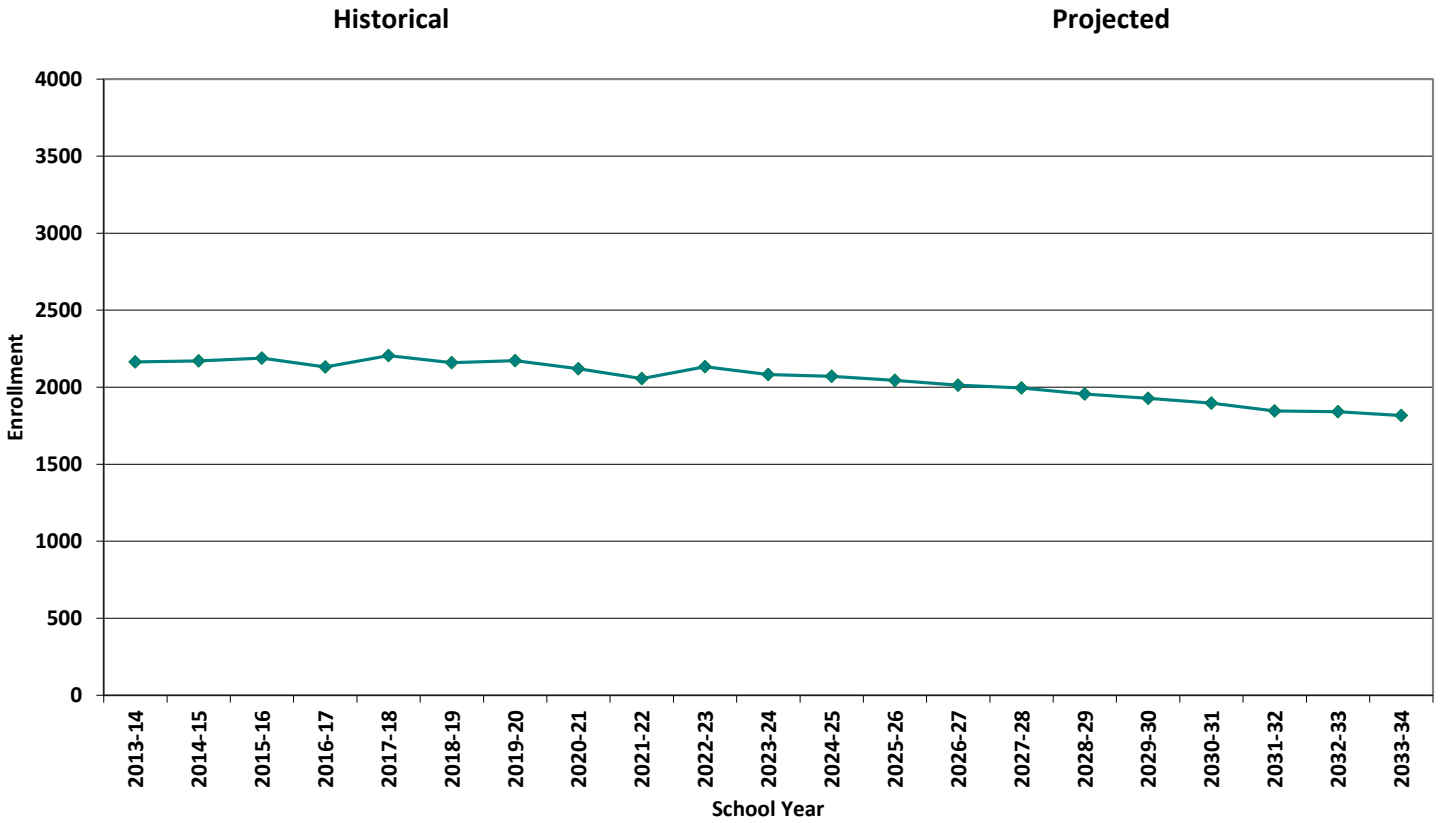
Projected Enrollment

Grades K-12, School Years 2023-24 to 2033-34



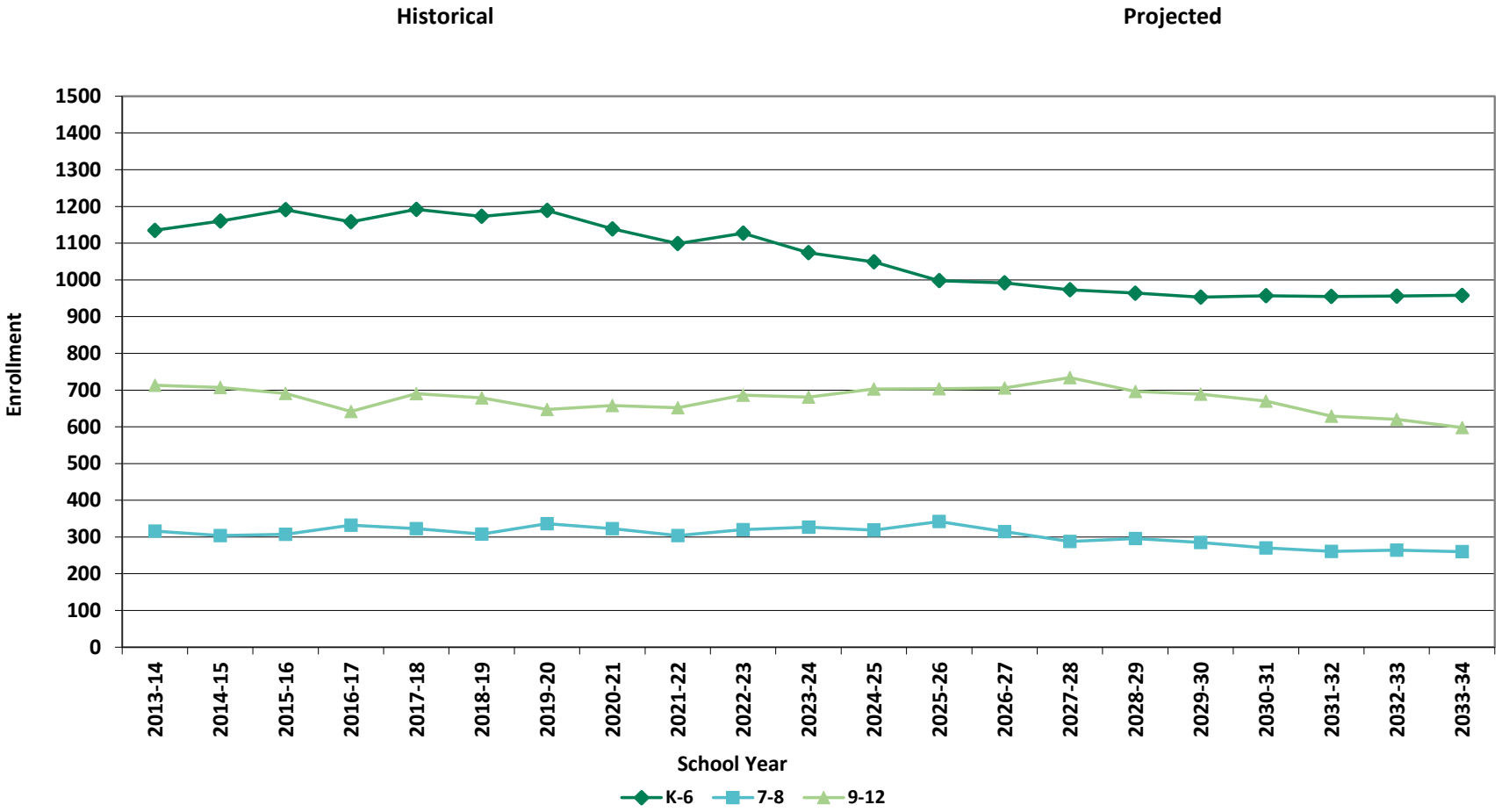
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Historical & Projected Enrollment



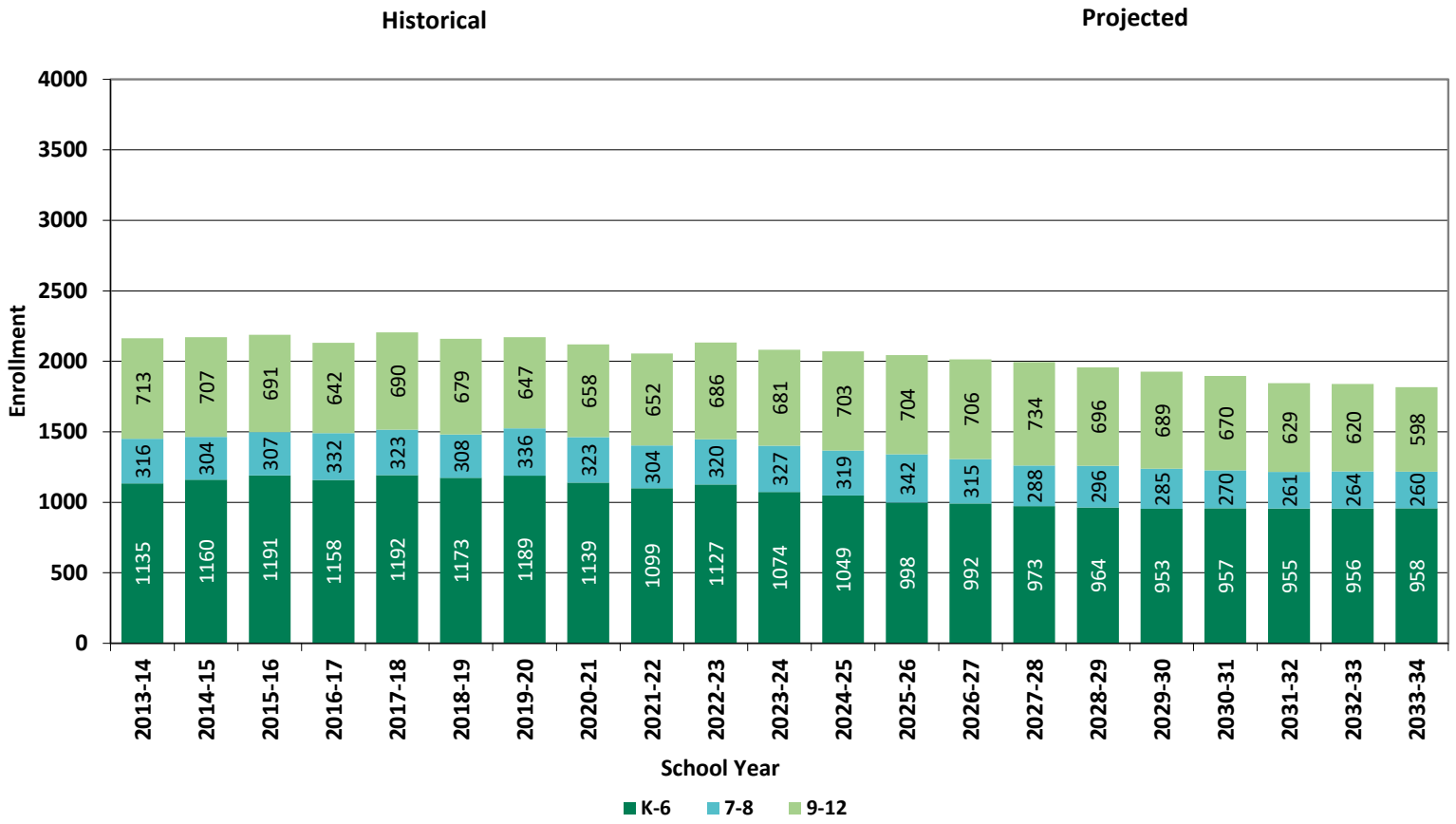
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Historical & Projected Enrollments in Grade Combinations



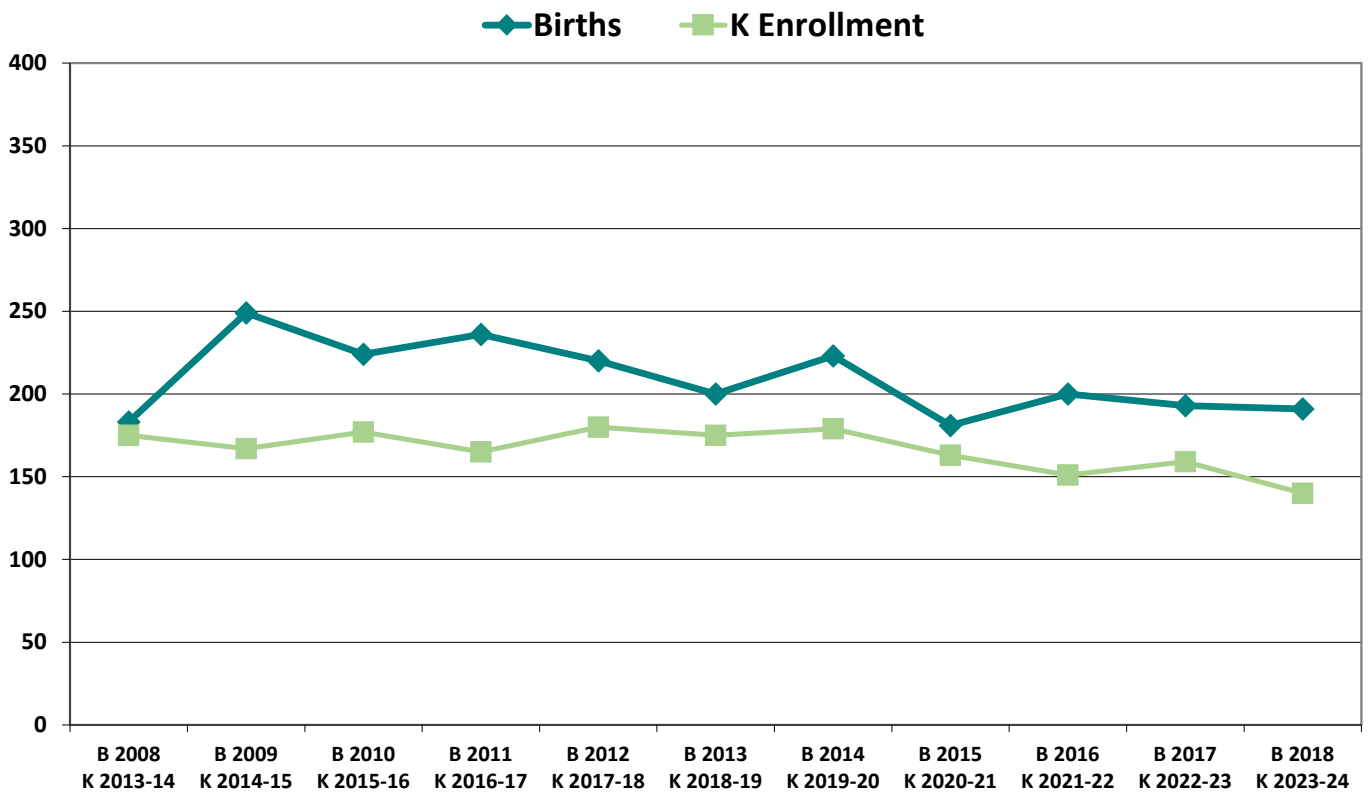
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Historical & Projected Enrollments in Grade Combinations



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Birth-to-Kindergarten Relationship



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Additional Information

Building Permits Issued (Source: HUD)		
Year	Single-Family	Multi-Units
2019	17	0
2020	15	8
2021	19	2
2022	59	0
2023	27	0

School Year	9 - 12 CTE	K - 12 Non-Public	K - 12 Choice-In	K - 12 Choice-Out	K - 12 Out-of-District SPED	K - 12 Homeschool
2019-20	n/a	n/a	n/a	n/a	n/a	n/a
2020-21	n/a	n/a	n/a	n/a	n/a	n/a
2021-22	n/a	n/a	n/a	n/a	n/a	n/a
2022-23	n/a	n/a	n/a	n/a	n/a	n/a
2023-24	0	n/a	84	118	20	13

*The above data was provided by the District, with the exception of building permit data (provided by HUD).
"n/a" signifies that information was not provided by District.
** < 10 Not reported, to protect subgroups with fewer than 10 students.

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New England's PK-12 Enrollments Trends

From 2022 to 2031, the US Department of Education anticipates changes in PK-12 enrollment of -1.8% in the South, -9.7% in the West, -5.0% in the Midwest, -9.1% in the Northeast, and a total of -5.5% nationwide.

State	Fall 2022 PK - 12	Fall 2031 Projected	PK-12 Decline	% Change 2022-2031
USA	49,618,464	46,889,600	-2,728,864	-5.5%
CT	513,513	465,200	-48,313	-9.4%
ME	173,853	162,900	-10,953	-6.3%
MA	923,349	857,100	-66,249	-7.2%
NH	168,909	156,600	-12,309	-7.3%
RI	137,449	127,900	-9,549	-6.9%
VT	83,654	77,300	-6,354	-7.6%

Source: U.S. Department of Education, National Center for Education Statistics, Enrollment in public elementary and secondary schools, by region, state, and jurisdiction: Selected years, fall 1990 through fall 2031, Table 203.20, Report Generated Dec. 2023, NESDEC 2.8.24

Although most New England Districts are seeing a decline in the number of births, NESDEC's experience indicates that the impact on enrollment varies from District to District. Almost half of New England Districts have been growing in PK-12 enrollment, and a similar number are declining (often in rural areas), with the other Districts remaining stable.

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Methodology, Reliability and Use of this Document

PROJECTION METHODOLOGY

Cohort component (survival) technique is a frequently used method of preparing enrollment forecasts. NESDEC uses this method, but modifies it in order to move away from forecasts that are wholly computer- or formula-driven. Such modification permits the incorporation of important, current district-specific demographic information into the generation of enrollment forecasts (such as in/out-migration of students, resident births, HUD-reported building permits, etc.). Percentages are calculated from the historical enrollment data to determine a reliable percentage of increase or decrease in enrollment between any two grades. For example, if 100 students enrolled in Grade 1 in 2022-23 increased to 104 students in Grade 2 in 2023-24, the percentage of survival would be 104%, or a ratio of 1.04. Ratios are calculated between each pair of grades or years in school over several recent years.

After study and analysis of the historical ratios, and based upon a reasonable set of assumptions regarding births, migration rates, retention rates, etc., ratios most indicative of future growth patterns are determined for each pair of grades. The ratios thus selected are applied to the present enrollment statistics to project into future years. The ratios are the key factors in the reliability of the projections, assuming validity of the data at the starting point.

RELIABILITY OF ENROLLMENT PROJECTIONS

Projections can serve as useful guides to school administrators for educational planning. Enrollment projections are more reliable in Years #1-4 in the future and less reliable in the "out-years." Projections six to ten years out may serve as a guide to future enrollments and are useful for planning purposes, but they should be viewed as subject to change given the likelihood of potential shifts in underlying assumptions/trends, such as student migration, births as they relate to Kindergarten enrollment, and other factors.

Projections that are based upon **the children who already are in the district** (the current K-12 population only) will be the most reliable. The second level of reliability will be for those children already **born into the community but not yet old enough to be in school.** The least reliable category is the group for which an estimate must be made **to predict the number of births**, thereby adding additional uncertainty. See these three multi-colored groupings on the "Projected Enrollment" tab.

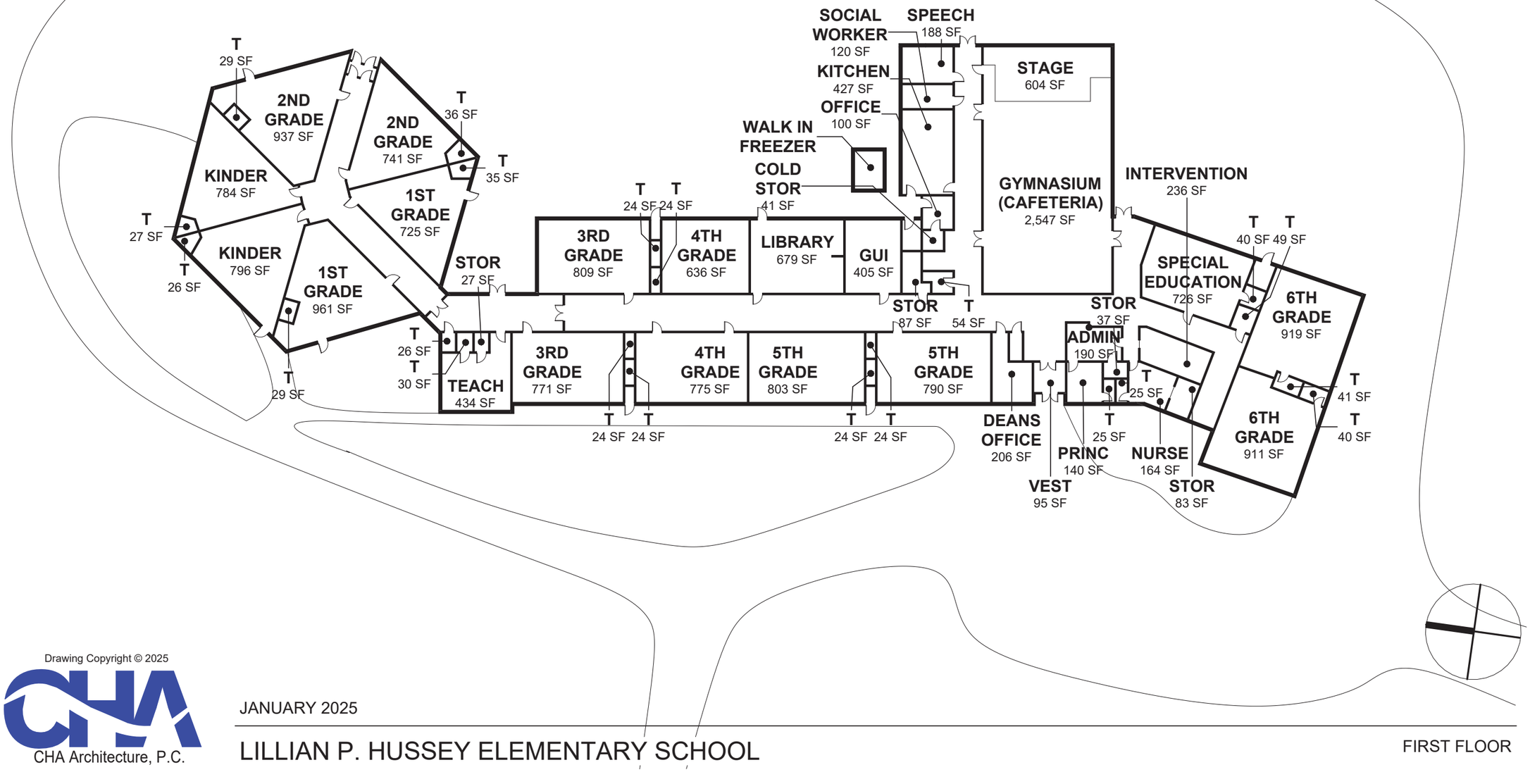
Annual updates allow for early identification of recent changes in historical trends. When the actual enrollment in a grade is significantly different (higher or lower) from the projected number, it is important (yet difficult) to determine whether this is a one-year aberration or whether a new trend may have begun. **In light of this possibility, NESDEC urges all school districts to have updated enrollment forecasts developed by NESDEC each October.** This service is available at no cost to affiliated school districts.

USING THIS INFORMATION ELECTRONICALLY

If you would like to extract the information contained in this report for your own documents or presentations, you can use screenshots, which can be inserted into PowerPoint slides, Word documents, etc. Because screenshots create graphics, the image is not editable. Please feel free to contact us if you need assistance in this matter, by phone (508-481-9444) or by email (ep@nesdec.org).

APPENDIX B

Building Plans



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JANUARY 2025

LILLIAN P. HUSSEY ELEMENTARY SCHOOL

FIRST FLOOR

T 20 SF
T 20 SF
T 20 SF
T 20 SF
1ST GRADE 1,128 SF
1ST GRADE 1,015 SF
CL 55 SF
T 20 SF
T 20 SF
NURSE 153 SF
T 22 SF
SOCIAL CDS 183 SF
T 27 SF
T 20 SF
CL 66 SF
STAIR 242 SF
CL 34 SF
PRE-K 722 SF
T 20 SF
T 20 SF
T 20 SF
T 20 SF
PRE-K 990 SF
CL 42 SF
T 20 SF
T 20 SF
PRE-K 845 SF
K-2 BEHAVIOR 1,020 SF
OT/PT 192 SF
CONF/ TESTING 386 SF
CL 99 SF
CUST 43 SF
TEACH 472 SF
STAIR 245 SF
STOR 207 SF
GYMNASIUM (CAFETERIA) 3,720 SF
STAGE 576 SF
CUST 27 SF
CL 50 SF
STAIR 328 SF
T 47 SF
STOR 67 SF
CL 87 SF
CUST 38 SF
PE STOR 240 SF
T 106 SF
T 106 SF
CUST 84 SF
CUST 150 SF
BOILER ROOM 298 SF
KINDERGARTEN 971 SF
SERVING AREA 860 SF
DISH
STORAGE 352 SF
T 20 SF
T 20 SF
CL 71 SF
KINDER 970 SF
ART/MUSIC 895 SF
STAIR 255 SF
CL 35 SF
LOBBY 669 SF
ADMIN 293 SF
SW 124 SF
CL 62 SF
PRINC 164 SF
KITCHEN 1,052 SF
COLD STOR 172 SF
PAN ROOM 141 SF
TRANS ROOM 203 SF
T 29 SF
T 20 SF
T 20 SF
VESTIBULE 263 SF
OFF 29 SF
T 20 SF
T 20 SF
DRY STORAGE 273 SF

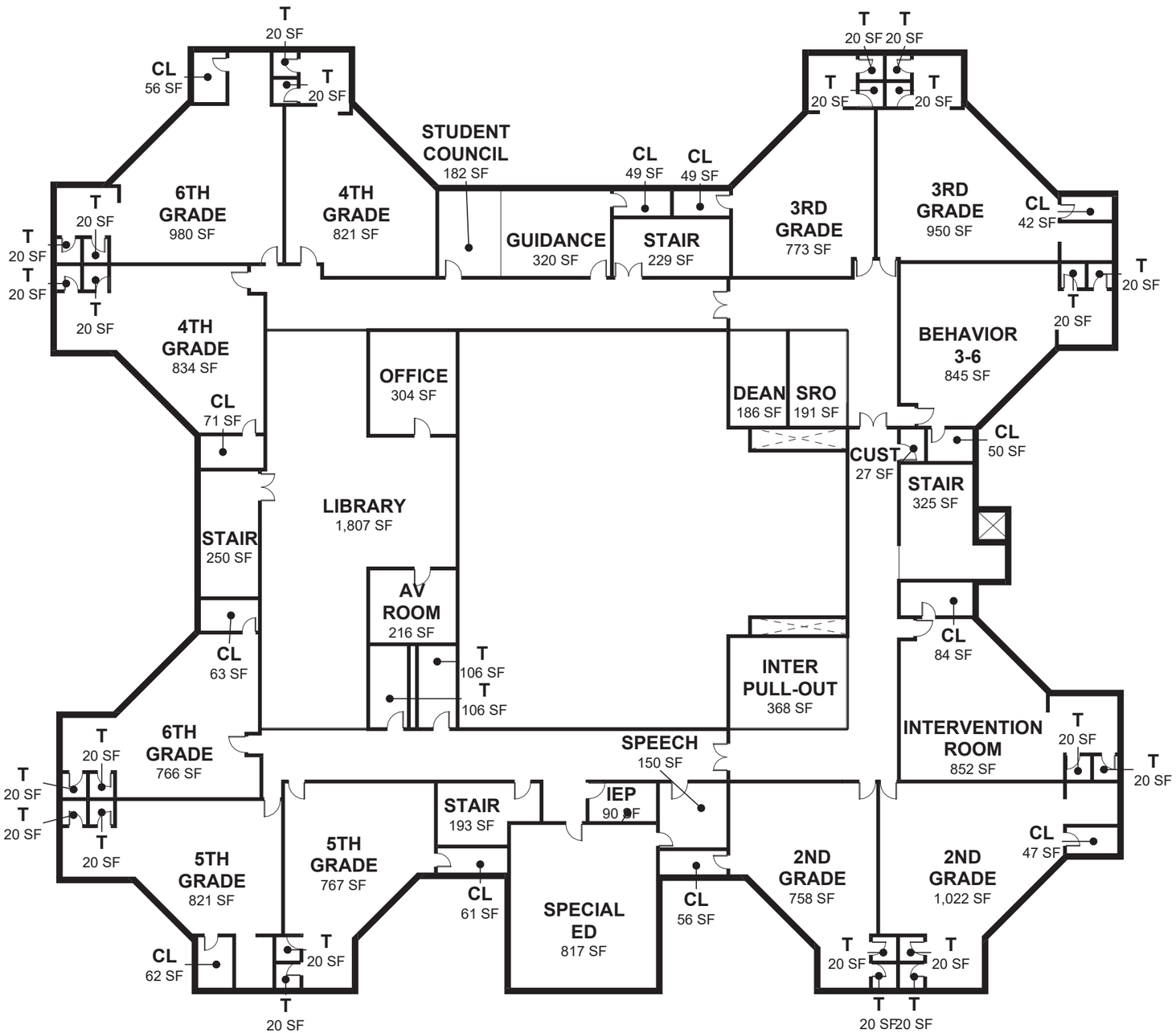
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JANUARY 2025

SYLVIO GILBERT ELEMENTARY SCHOOL

FIRST FLOOR



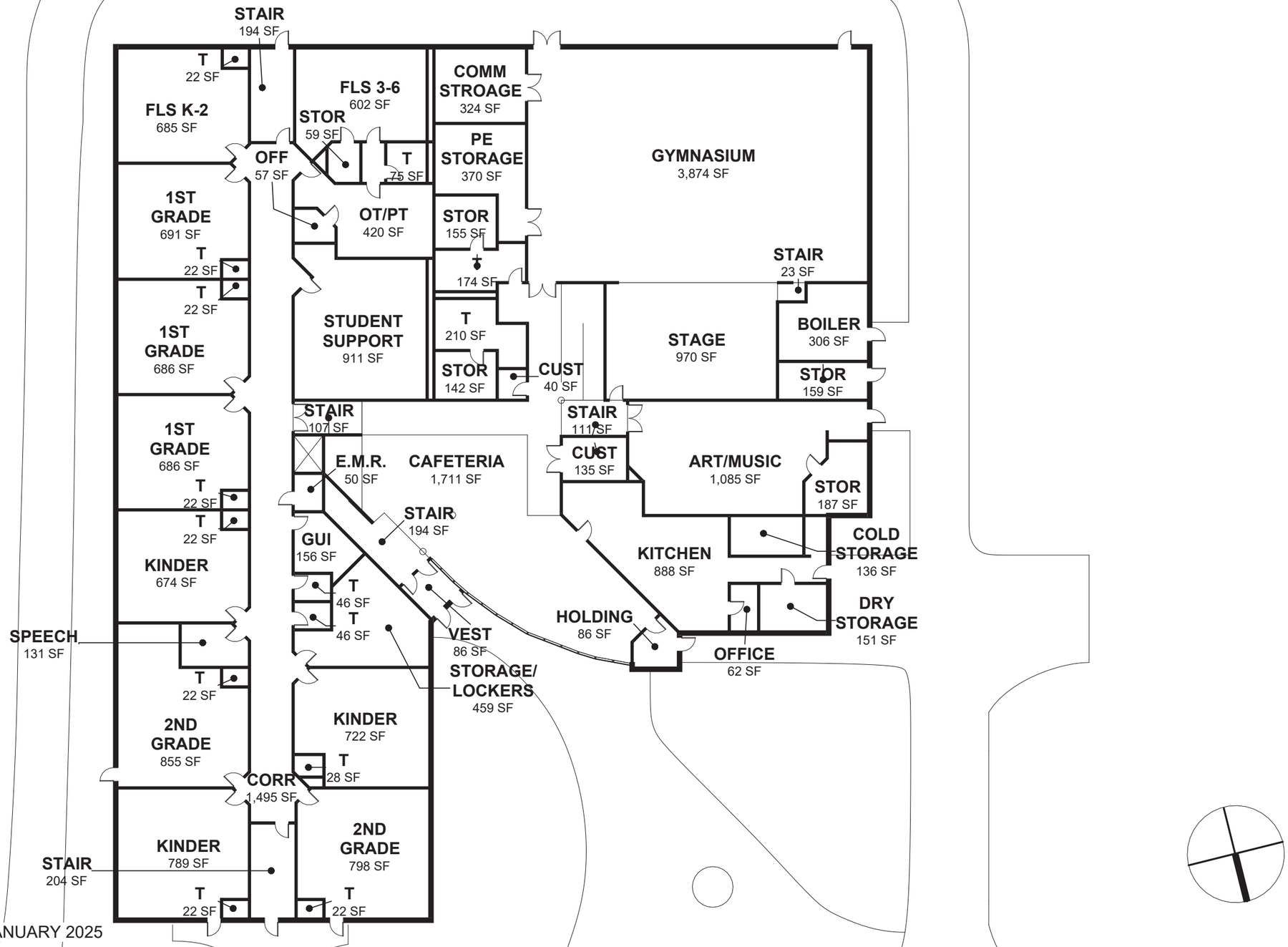
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JANUARY 2025

SYLVIO GILBERT ELEMENTARY SCHOOL

SECOND FLOOR



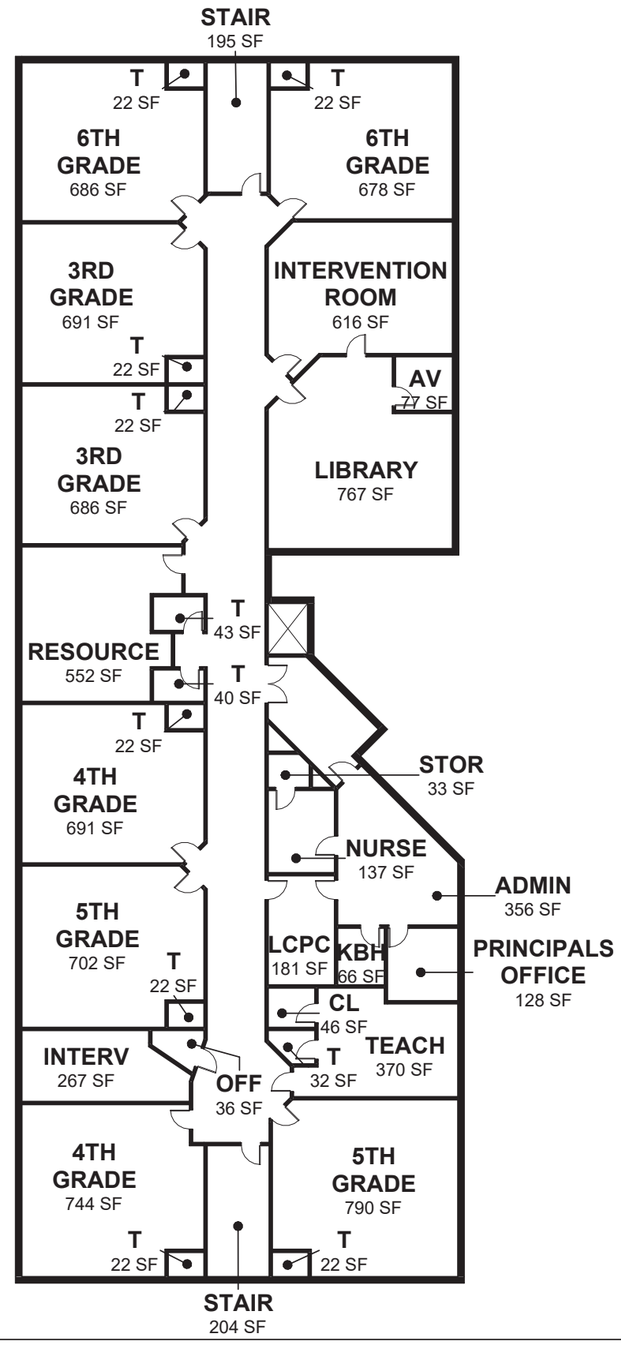
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JANUARY 2025

LINCOLN ELEMENTARY SCHOOL

FIRST FLOOR



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JANUARY 2025

LINCOLN ELEMENTARY SCHOOL

SECOND FLOOR

GYMNASIUM
3,772 SF

COMM STORAGE
308 SF

PE STORAGE
326 SF

STOR
125 SF

T
158 SF

T
175 SF

STOR
128 SF

STAIR
25 SF

RAMP

BOILER
269 SF

STAGE
946 SF

STORAGE
155 SF

CUST
40 SF

STAIR2
104 SF

CAFE ANEX
274 SF

MUSIC
1,019 SF

STOR
126 SF

STOR
165 SF

OFF
42 SF

DRY STORAGE
210 SF

KITCHEN
894 SF

LAUND
14 SF

T
36 SF

COLD STROAGE
175 SF

OFFICE
84 SF

CAFETERIA
1,269 SF

LOBBY
471 SF

VEST
86 SF

ADMIN
298 SF

STOR
124 SF

PRINC
114 SF

T
28 SF

CONF
103 SF

DEANS OFFICE
470 SF

QUIET

LCPC
162 SF

GUI
152 SF

FLS K-2
724 SF

T
65 SF

STOR
50 SF

NURSE
258 SF

2ND GRADE
686 SF

2ND GRADE
669 SF

FLS 3-6
682 SF

T
17 SF

T
17 SF

T
22 SF

T
22 SF

2ND GRADE
659 SF

T
52 SF

T
53 SF

PRNT
57 SF

CUST
23 SF

STOR
88 SF

ART
922 SF

STAIR3
158 SF

STAIR4
164 SF

SPEECH/O.T.
449 SF

E.M.E.R.
62 SF

LIBRARY
1,626 SF

OUTPAITENT CARE
113 SF

RAMP

STUDENT SUPPORT
684 SF

T
21 SF

1ST GRADE
676 SF

T
20 SF

T
18 SF

T
18 SF

T
19 SF

T
17 SF

T
21 SF

KINDER
741 SF

KINDER
723 SF

KINDER
721 SF

1ST GRADE
720 SF

1ST GRADE
754 SF

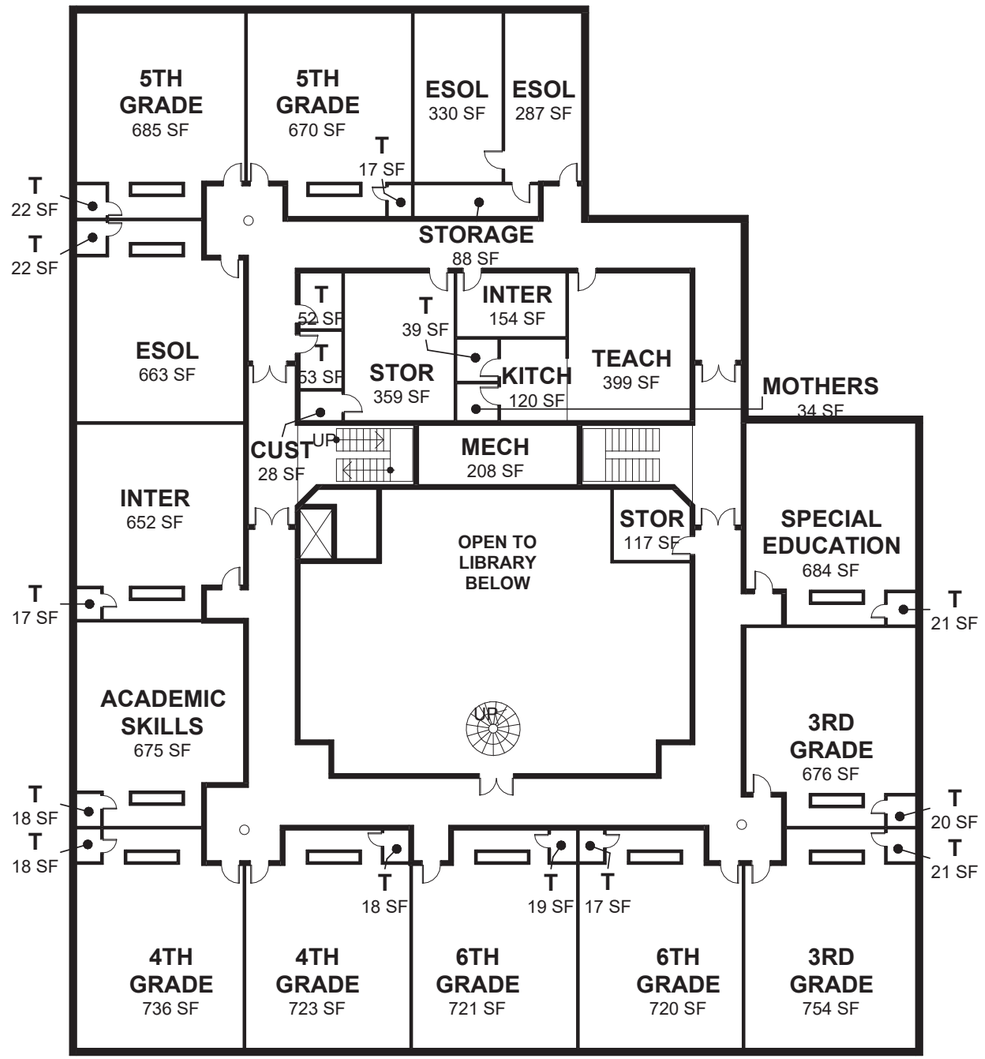
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JANUARY 2025

FARRINGTON ELEMENTARY SCHOOL

FIRST FLOOR



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JANUARY 2025

FARRINGTON ELEMENTARY SCHOOL

SECOND FLOOR

H:\Master Proj Files2\Cony High School\Cony-CAD\CD\A11(A-D).dwg

Aug 26, 2004 - 5:30pm

MATCHLINE "E"

MATCHLINE "A"

MATCHLINE "B"

MATCHLINE "C"

MATCHLINE "D"

MATCHLINE "G"

Cony High School

AUGUSTA, MAINE

SHEET
A1.0
/A-D

TITLE
REFERENCE PLAN: FIRST FLOOR CONY

ISSUE
30 AUGUST 2004

SCALE:
1/16"=1'-0"

DRWN. CHK
TAK

JOB NO.
01-044

REGISTERED ARCHITECT * STATE OF MAINE *
LYNDON D. KECK
No. 1142

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ARCHITECTURE
INTERIOR DESIGN
PLANNING
PDT ARCHITECTS
49 DARTMOUTH STREET
PORTLAND, ME 04101
207 775-1050
207 775-2694 FAX

H:\Master Proj Files2\Cony High School\Cony-CAD\CD\A12(B-D).dwg

Aug 26, 2004 - 5:33pm

MATCHLINE "E"
MATCHLINE "A"
MATCHLINE "B"
MATCHLINE "D"
STAIR DN
EXIST. SECOND ELEV: 208'-4"
SECOND FLOOR ELEV: 219'-8"
MECH MEZZ ELEV: 238'-6"
UPPER AUDITORIUM B201
CONTROL B220
OPEN
BOOK STORAGE B222
MECH MEZZ B236
MECH B247
ATM B242
BUSINESS LAB B245
BUSINESS LAB B248
LANGUAGE LAB B246
RESOURCE B234
CLASSROOM B201
CLASSROOM B203
FACULTY WORK B205
CLASSROOM B235
CLASSROOM B233
FACULTY WORK B231
RESOURCE B236
CLASSROOM B225
CLASSROOM B232
CLASSROOM B230
CLASSROOM B226
CLASSROOM B224
CLASSROOM B202
CLASSROOM B204
CLASSROOM B208
CLASSROOM B210
CLASSROOM B212
PROJECT AREA B214
CADD B216
CHEMISTRY B215
PREP B217
CHEMISTRY B221
INTEGRATED SCIENCE B228
PROJECT AREA B222
FACULTY WORK B227
GIRLS B223
BOYS B219
STAIR S4
STAIR S2
STAIR S3
ELEV. PIT
ELEV. MACH.
ELEV. PIT
ELEV. MACH.
ELEV. PIT
ELEV. MACH.

| | | |

APPENDIX C

District Priorities

Administrative Goals

Augusta School Department - School Board Priorities
2024-2025

Making School Matter

Wellness and Safety of Students and Staff
To dignify ALL students and staff, wellness and safety is a priority.

Allocation of Resources to Enhance Student and Staff Learning Outcomes
To maximize student learning for ALL; resources, programs and staff will be efficiently supported through professional development and the development of systems of support.

Community - Communication and Relationships
To foster relationships and bring the community together, communications and invitations will continue to be visible and offered.

Comprehensive Educational Planning
To rework district programs to better meet student and staff needs in coordination with the new school project.

ASD Administrative Team Goals 2024-2025

Making School Matter

It all started with one question:

"If we focused solely on enhancing the quality of education in Augusta schools over the next 12-24 months, what actions would we prioritize?"

Process:

We hired a 3rd party educational consultant to lead us through a process to help design the protocol used with Staff, Administration and the School Board. There was 360 degree feedback into the process so that we could be as inclusive as possible to allow for maximum educator voice. In late June, the Board met to process through and develop the following priorities. After the four priorities were crafted, then the Administrative team went to work to create actionable steps to "operationalize" the Board's priorities.

Making School Matter Priorities:

1. **Wellness and Safety of Students and Staff**
   Prioritize the wellness and safety of all students and staff.
2. **Allocation of Resources to Increase Student and Staff Learning and Performance**
   Maximize student learning and outcomes through the implementation of a system of supports, and support staff through professional development opportunities.
3. **Community - Communication and Relationships**
   Build parent, stakeholder, and community engagement through clear and frequent communication, open and transparent processes, and deliberate opportunities for community involvement.
4. **Comprehensive Educational Planning**
   Examine and rework district programs to better meet student and staff needs that are immediate and in coordination with the new school construction project.

ASD Administrative Team Goals 2024-2025:

Clear Goal (What)	Specific Objectives (What in Detail)	Action Steps (How)
A. Provide a culture of safety and wellness	Increase staff & student attendance.	Highlight "Making School Matter" letter to families, and check-in at mid-year (reinforced in each school).
		Monitor student attendance with the dropout committee.
		Work with AEA on the value of staff attendance.
		Incentivize staff attendance.
	Provide systems that support student and staff safety and wellness.	Review, overhaul and re-write the district's comprehensive emergency plan.
		Administration to be trained in updated MSSC training.
		Re-vitalize the wellness committee this year.

	Assess the climate/pulse of the district's school culture.	Survey pre/post (September and May) staff, students, families regarding their views of safety and wellness.

Clear Goal (What)	Specific Objectives (What in Detail)	Action Steps (How)
B. Develop a district-wide Multiple Tiered System of Supports (MTSS) both in philosophy and practice (including intentional professional development).	Create, Implement & Offer PD to support MTSS.	Develop a true ***district-wide*** Multiple Tiered System of Supports.
		Intentionally reinforce training on the "why" or philosophy of MTSS.
		Offer new learning on the practice of reviewing data (including Academic and Behavior).
		Train staff on innovative instruction and differentiation strategies to include academic and SEL techniques and interventions. (i.e. Regulated Classroom, Safety Care Training)
		Identify universal screeners and teach staff to use them.
		Identify and create new progress monitoring tools.
	Offer Intentional PD on Multi-Language Learning strategies.	Provide ESOL/ML training.
	Review data to revise curriculum.	Move ELA Curr. Review process up in the 5 year timeline.
		Provide Growth vs. Achievement training. (ie. Local/state difference on NWEA).
		Explore *Science of Reading* as a potential curriculum tool.
		Review *Fountas and Pinell* validity as a local research based assessment.
		Create a culture to observe each others' craft.
C. Foster more community relationships within our schools	Explore opportunities for partnerships and collaborations.	Complete the Alternative Edu. proposal process.
		Continue partnerships with the community organizations (ie: Teen Center, KBH, Food Bank, Elks, Lit for ME, United Way, Capital Area New Mainers, etc.)
		Grow community connections this year.
		Produce more invitations in and outreach efforts to reach stakeholders.

		Intentionally set ways to collaborate with city officials.
	Increase communication with stakeholders.	Improve translations to better communicate.
		Continue with global calendar, touch-point invitations with city council, etc.
	Create our brand	Develop the look and functionality of the website.
		Continue Logo campaign.
	Broaden educational PK-Adult partnerships.	Continue with the new school project.
		Host Superintendent and City Manager Meetings.
	Participate in Impact 2032.	Participate more formally in Impact 2032.

Clear Goal (What)	Specific Objectives (What in Detail)	Action Steps (How)
D. Review district programs and make recommendations for improvements	Build a new school in Augusta	Use the new school project process to examine district programs. We will bring in multiple stakeholders to review data for comprehensive planning.
		Review enrollment reports.
		Intentionally review ideas to better utilize district programs to meet student needs equitably.
	Comprehensive educational planning	Conduct a Superintendent's listening tour.
		Continue to systematize the district by looking for ways to streamline what we do.
		Maintain monthly check-ins on our progress.
		Create an Administrative Instructional Rounds process for the A-Team (host A-team in different buildings across the district and visit each school).
		Review learning from the MTSS process and our overall programs to make recommendations.