

EVALUATION REPORT

PORTLAND PUBLIC SCHOOLS

BUILDINGS FOR OUR FUTURE



VOLUME 1 OF 2

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Executive Summary

Portland Public Schools (PPS) has conducted multiple facility condition assessments over the last fifteen years to identify deficiencies in its elementary school facilities that detract from student learning. Although Portland's public middle schools and high schools received major renovations in the 1980's and 1990's, most of the city's elementary schools have not had significant renovations. Furthermore, two new elementary schools have been built in the last seven years, which has made evident the differences in comfort, safety, and educational programming space between the older and newer schools. A fire at Hall Elementary School in September 2012 and lack of space across the district underscore the urgency of addressing the long-delayed facility needs.

In 2010, the Elementary School Capital Needs Task Force (ESCNTF) identified that many of the elementary school facilities lack the physical space and infrastructure to meet current education standards. This group recommended an elementary facilities equity model and provided preliminary budget estimates to replace Hall School and expand Ocean Avenue Elementary School as well as to renovate and expand Longfellow, Lyseth, Peaks Island, Reiche and Presumpscot Elementary Schools. Based on these estimates, a local bonding expectation of \$46 million was established. In August 2012, the Portland City Council approved \$3 million for school projects in the FY2013 Capital Improvement Program (CIP), including \$700,000 for initial planning of school building improvements. This initiative became known as the *Buildings for Our Future* project.

The goal of the project was to develop preliminary concept designs, construction schedules and estimated construction costs for the replacement of the Hall Elementary School and the major renovation of the Longfellow, Lyseth, Reiche and Presumpscot Elementary Schools. An analysis of the district's elementary school capacity, demographics and enrollment trends (including updated enrollment projections), and recommendations to create a better balance between capacity and enrollment, were another main goal of the project. A third goal was to assess several stand-alone PPS district programs to determine whether it made sense to relocate one or more of them within the renovated school facilities.

From November 2012 to July 2013, Oak Point Associates (working closely with PPS senior leadership and the Portland Board of Public Education) conducted research and assessments, interviewed key stakeholders, developed concept designs, analyzed demographics and enrollment trends, developed budgets and phasing plans, and conducted public outreach in support of the *Buildings for Our Future* project.

Based on hundreds of hours of community input, one-on-one conversations with parents and teachers, public forums and design charrettes, and the development of many design concept alternatives, the resulting set of projects proposes two state-funded design projects and three locally bonded projects, with a total local cost of \$39.9 million.

The result of this effort is a comprehensive solution for establishing all of Portland's mainland elementary schools as 21st century centers for learning.

Introduction

Portland's eight mainland elementary schools accommodate Portland's mainland Kindergarten-Grade 5 population in facilities that are between two and sixty-one years old.

School	Constructed	Renovated	Area (gsf)	Capacity
Longfellow Elementary School	1952		42,788	396
Fred P. Hall Elementary School	1956		54,036	447
Harrison Lyseth Elementary School	1960/1963		51,725	502
Presumpscot Elementary School	1962		29,702	315
Reiche Community School	1972		73,266	373
Riverton Elementary School	1976	2007	113,715*	449
East End Community School	2006		72,620	477
Ocean Avenue Elementary School	2011		70,315	437

* The gross area at Riverton includes Community Center space, as well as (4) classrooms utilized by Portland Adult Education in 2012/2013, which were not included in capacity calculations.

Two school facilities (East End and Ocean Avenue) were recently constructed under the State of Maine Department of Education's (DOE) Major Capital Improvement Program (MCIP). The Riverton Elementary School received an addition and major renovation in 2007. The five remaining schools have not received major renovations or additions since their construction.

In 2010, the Elementary School Capital Needs Task Force identified that many of the elementary school facilities lack the physical space and infrastructure to meet current education standards, and that there is a wide variation in the quality of space across the elementary schools. The new and recently renovated schools called attention to the facility gap between the older and newer buildings. At the same time, the district is facing increasing enrollment at the elementary level and some schools are chronically over capacity.

Additionally, several stand-alone PPS programs are either lacking a permanent home or are housed in facilities that are taking up prime educational space, and in some cases are located in buildings that do not meet current code. These include Central Office, Portland Adult Education, Student Support Services, Casco Bay High School, and the Multilingual and Multicultural Center.

Scope

The scope of the *Buildings for Our Future* (BFOF) project has three major components:

1. School Projects: Undertaking a limited facility assessment and developing concept designs, construction schedules and construction cost estimates that would bring each of the five elementary schools into equity with the three newly constructed or renovated elementary schools.
2. School Capacity: Developing updated enrollment projections, performing an analysis of the capacity of each school relative to the projected enrollment, and developing short-term and long-term recommendations for rebalancing district-wide elementary student enrollment.
3. District Programs: Reviewing the needs of PPS' stand-alone programs, and evaluating whether there might be a comprehensive solution in accommodating one or more of these programs within the elementary school projects.

The project scope for the BFOF renovations at the Lyseth, Longfellow, Reiche, and Presumpscot Schools is based on the "facilities equity model" defined within the April 2010 final Elementary School Capital Needs Task Force (ESCNTF) report. The model includes 19 items:

- Safe and secure learning and working environments (secure building, clearly defined single point of entry, telephones in every occupied space)
- Follow LEED standards in renovations and new construction
- Separate gym and cafeteria
- Performance space/stage
- Small group learning spaces
- Designated student support services / special education spaces
- Multiple designated professional and administrative staff support spaces/offices
- Additional learning spaces (Hands-on Learning Lab, Discovery Room, etc.)
- Data infrastructure that supports enhanced computer networking
- Site features that include: adequate parking and circulation, outdoor play and learning space, ADA accessibility
- Library/media center
- Computer lab
- Properly accommodated art space
- Appropriately appointed music room
- ADA accessible shower
- Finishing kitchen
- Individual restrooms for students
- Community/Volunteer support space
- New program considerations (Pre-Kindergarten)

Because of its position on the MCIP priority funding list, Portland Public Schools asked that Hall Elementary School be considered a new construction project, rather than a renovation. The program and concept designs for the Hall School are largely based on what the DOE typically supports for a new construction project under the MCIP.

Portland Public Schools is invested in creating 21st century learning environments for its students. At the heart of this effort is a “student-centered learning” approach, which makes use of new tools to respond to each student’s needs and interests. There are six main features of student-centered learning, some which change the way that school buildings are designed and utilized:

- *More flexible use of time:* students move through the school day at their own pace- with guidance from staff and parents- through a set of learning experiences.
- *Expanded understanding of place and space:* some learning takes place beyond the walls of the school building and beyond the hours of the school day.
- *A deeper and broader set of skills and knowledge:* students are encouraged to collaborate and work in teams, analyze data, utilize technology, and apply learning to real-life situations. School facilities need space for group work, classroom lectures, hands-on learning, art rooms, and project-based work spaces.
- *The teacher as learner and facilitator:* teachers work together to target instruction to smaller groups of students working on the same learning goals.
- *Students show what they know:* student progress is monitored regularly and is transparent to teachers, parents and staff.
- *The community as educational partner:* the school is considered part of the community and the community is considered part of the schools.

Combining the objectives of the ESCNTF facilities equities model and the student-centered learning approach, a set of guiding criteria for the school projects was developed.

What does a 21st Century School look like?



Process

The project was accomplished within a short timeframe, from November 2012 to June 2013. The process began with information gathering, public engagement and facilities assessment before moving into concept design, scheduling, budgeting and public review. The project timeline was as follows:

Notice to proceed	November 9, 2012
Complete research and assessments	November 21, 2012
Complete interviews with key stakeholders	December 19, 2012
Complete neighborhood design charrettes	January 23, 2013
Develop options for each site	February 27, 2013
Review options with key stakeholders and the public	March 20, 2013
Finalize plans for each site	April 17, 2013
Present final plans for each site	May 15, 2013
Present final recommendations to the School Board	May/June 2013
Present final recommendations to City Council	June/July 2013

A general summary of the project's process is outlined below.

The design team began by reviewing reports provided by Portland Public Schools for overall equity needs. These included the April 2010 final Elementary School Capital Needs Task Force (ESCNTF) report, the 2009 NESDC Long-Range School Facilities Planning Report, and the 2011 Athletic Facilities Task Force Report. Record drawings of the five schools were gathered from the PPS and City of Portland archives. Each school was visited on numerous occasions, floor and site plans were verified, building systems and utilities were noted.

Interviews with key stakeholders were held. These included: PPS senior staff, leadership and staff members at each school, Portland Public Schools department heads (Transportation, Food Services, Student Support Services, Multilingual, Technology Services), Portland Adult Education, and City of Portland departments (Public Buildings, Public Services, Recreation, Planning and Urban Development). (Interview notes are located in Appendix C.)

Neighborhood design charrettes were held at each of the five schools between January 3 and January 31, 2013, which were an opportunity for the public to learn about the project and to provide input as to what was important to them. Utilizing the input that was received from site visits, previous reports, interviews and neighborhood design charrettes, concept design options were developed for each school. (Charrette presentations can be found in Appendix D.)

In January, 2013 Davis Demographics & Planning (DDP) was contracted to undertake residence-based enrollment projections, and to assist Oak Point Associates with developing recommendations for addressing short- and long-term school capacity issues. A School Capacity Task Force, comprised of citizens from each elementary school district, was also convened to provide input to Oak Point Associates on the proposed school concepts and capacity recommendations. This group met a total of six times between February 11 and April 29, 2013.

Concept designs were presented to the Portland Board of Public Education (School Board) on February 26, 2013.

Between March 4 and April 1, 2013, Oak Point conducted staff meetings and public forums at each of the five schools, where initial concept design alternatives were presented for the renovations and new construction, and input was solicited on the alternatives. Feedback from both teachers and members of the public was received, and most of the meetings were well attended. Oak Point also met again with several City of Portland Public Services and Recreation department staff members, as well as members of the Planning Department, to solicit their feedback on proposed alternatives. During these months, periodic meetings were held with PPS senior staff to discuss the feedback received, to solicit additional input, and to report on progress.

The feedback received allowed Oak Point to consolidate the preliminary concept plans to a single alternative for Longfellow, Lyseth, Presumpscot and Reiche. Two concept alternatives were developed for Hall School, to establish adjacency and gross square foot requirements for budgetary purposes. Estimates of probable construction cost were developed to accompany the refined concepts. Construction phasing and sequencing was considered for each school to minimize disruption of operations, as well as to allow staggered construction starts at seasonally beneficial times.

The revised concept designs for each school, as well as a summary of short- and long-term capacity recommendations, were presented to the Portland Board of Public Education on May 14, 2013. Additional meetings with the Board were held on May 21, May 28 and June 4, 2013 to review budgeting and construction phasing options. On June 11, 2013, the Board authorized the Chair of the Portland Board of Public Education to request City Council action on recommended *Buildings for Our Future* projects, with associated budgets and timelines.

Three meetings with the City Council Joint Finance Committee were held (on June 13, June 27 and July 25, 2013) to review the recommended projects, budgets and timelines. On July 25, 2013, the Joint Finance Committee voted to delay a referendum for local funding of BFOF projects until June 2014.

School Projects

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Longfellow Elementary School

Year Opened:	1952
Number of Stories:	Two (with partial basement)
Building Area:	42,788 gsf
.....	36,690 gsf (Building Footprint)
2012/2013 Student Enrollment:	404
Capacity:	396 (Based on 2012/2013 grade configurations and district class size maximums)
2012/2013 Full-Time-Equivalent	
Staff Members:	48
Site Area:	3.9 Acres (Site is part of an 18.8 acre parcel that includes Deering High School and Presumpscot Park athletic fields)
Approximate Lot Coverage:	21.6%
Zone:	R-5 (Residential)
Setbacks:	20 feet (Front and Rear Yard)
.....	14 feet (Side Yard for 2-1/2 Story Structures)
.....	15 feet (Side Yards on Side Streets)
.....	5 feet (for accessory detached structures less than 144 ft ²)
Additional Site Constraints:	Off-site utilities run through the site beneath the playground and the staff parking lot
Total Available Parking Spaces	
(approximate):	54 (including six accessible spaces)

A summary table identifying current and proposed program spaces at Longfellow Elementary School is contained at the end of this section of the report, along with a budget summary and timeline. Existing and proposed site plans, floor plans and massing plans can be found in Appendix B.

Existing Conditions

Longfellow Elementary School is located on Stevens Avenue (between Pleasant Avenue and Ludlow Street) and is part of a campus that includes Deering High School and the Presumpscot Park athletic fields. The Longfellow School is a two-story building (with partial basement), which sits on an approximately 4-acre site. The school was constructed in 1952 and has not been expanded or received a major renovation since it was built.

Building Features

Longfellow Elementary School is lacking in program, support and storage space. The building lacks appropriately sized Art, Music and Special Education (SpEd) classrooms and many of the rooms support multiple programs. Set-up time, scheduling and disruptions/distractions compromise these educational programs.

The main building entrance has a non-controlled airlock with five steps up to the first floor level of the building. The Principal's office is located directly to the south of the main entrance. The administrative area is located to the north of the entry and consists of the main office (which does not have a view into the main entry vestibule), an office for the Intervention Specialist and an office for the Assistant Principal (which is entered either through the main office or through the Intervention Specialist's office). This configuration is very disruptive and creates privacy issues. There is a conference room to the north of the main office that is used as a Technology office, testing room and team meeting room. There is no work room in the building so consequently copiers and other items are located in the hallways.



Main entrance vestibule



Main entrance vestibule



Corridor with equipment



Main office entry

To the south of the main entrance, the main academic wing (double-loaded corridor configuration) and south wing (single loaded) house a pre-K classroom, three kindergarten classrooms (one without a toilet in the classroom), teachers' room, girls' group bathroom, and four first/second grade classrooms. There is an exit to the far south that leads to the upper playground and a door that opens to the learning garden. A stair tower leads to the basement classrooms and the second floor.

To the north of the main entrance are two additional first/second grade classrooms, K-2 SpEd, speech (which is shared by the Psychological Examiner), a storage room used for food and custodial supplies, boys' group bathroom, a non-ADA-compliant staff toilet, and the nurse's office with a non-ADA-compliant toilet room and a quiet room. A stair tower leads to the second floor classrooms.



Nurse office



Nurses office toilet room

Directly across from the nurse's office is a multi-purpose room used as a gym, cafeteria and for hosting student assemblies. A raised platform is set up with portable risers on the stage for children to watch games in the morning. This raised area is also used as a storage area and office for the gym teacher. Currently only kindergarten and 5th graders eat in the multi-purpose room. All other students eat in their classrooms and carry their waste to recycling areas located on either ends of the main hallways. There have been issues with spills and fruit flies in the hallways, especially near the recycling areas. The multi-purpose room is used before and after school by the district and then is turned over to the City of Portland Recreation Department is after school program at 3:35. Recreation storage is to the south of the stage in an area that used to pass through to the music room. There is a 3'-0" wide door in the northwest corner of the multi-purpose room that is used for receiving deliveries. The width of the door does not allow for pallet deliveries, so most items need to be carried into the building.



Multi-purpose room



Handicap ramp and delivery entrance



Stage

The music room is located to the west of the raised platform. At 495 square feet, it is undersized for the program and has major acoustical issues. The space does not have storage closets for instruments or equipment. Longfellow has three music programs (band, strings and general music) and currently uses the music room, the multi-purpose room and a fifth grade classroom to accommodate the program.



Music room



Library

Across the hall to the south of the multi-purpose room and music room is the library, which consists of two former classrooms with a wall opening between them. There are two doors that lead to an exterior courtyard (the learning garden). The space does not have an office area or book prep area. Shelf space is tight and currently not mobile. There is an overwhelming consensus to move the library to a quieter location in the building away from music and the multi-purpose room, and closer to the general classrooms.

The second floor has a double-loaded corridor with stair towers at either end and extends over the main academic wing of the first floor. Grades 3, 4 and 5 are housed on this floor in three classrooms per grade and a grades 3-5 SpEd classroom that doubles as the Spanish office. Girls' and boys' group toilets are located in the northwest corner. There are no staff support spaces (toilet, workroom) on this floor.

The basement level, which is directly under the first floor classroom wing to the south of the main entrance, has a single-loaded corridor that houses an overcrowded storage room; a classroom that is shared by ELL, Gifted and Talented (GT), OT/PT and a tech closet (causes major distractions); a Reading classroom (no window); an electrical closet; a boiler room (that doubles as a storage room) and the Art classroom. The Art room is undersized and lacks storage. Many of the supplies, as well as art projects, line the walls of the corridor. The kiln is vented to the outside, but is located within the classroom. Plumbing fixtures are not ADA compliant and do not have plaster traps. All of the windows in this part of the building are above head height and are difficult to open. There are no student toilets or staff support spaces on this level. At the end of the corridor is a door that exits to a landing with steps to the lower playground.

One of the priorities for improving Longfellow School is addressing lack of space for programs.



Shared ELL, GT, OT/PT, tech room



Shared ELL, GT, OT/PT, tech room



Art room



Art room plumbing fixtures



Basement corridor

Accessibility and Life Safety

There are six standard width parking spaces in the staff parking lot that are marked as accessible; however, only two have an adjacent access aisle. Current *ADA Standards for Accessible Design* require a minimum of three accessible spaces, including one van accessible space. Compliant spaces must be adjacent to an appropriately sized access aisle.

All of the entrances to the building are above grade and have steps leading to them. There are also several steps located just inside the doors. The main floor of the building is approximately four feet above grade at the main entrance. An accessible entrance is provided by way of a metal ramp on the north face of the building that leads to a door on the backside of the multi-purpose room. There is no camera or buzzer system to control this entry and access is by knocking and hoping someone is there to open the door. This is the only route into the building that is accessible to persons with disabilities. There are no accessible routes to the outdoor learning garden space. Classrooms are located on all three floors of the building and two stairwells provide the only means of access between the floors. There is no elevator in the building.



Main Entrance



Entrance from Upper Playground

Toilet rooms for students on the first floor have been renovated to provide accessibility, but toilets for staff, student toilet rooms on the second floor and in the nurse's office do not meet ADA requirements. Doors throughout the building are not equipped with accessible door hardware and many doors do not have the required clear floor space needed for operation.

All floors of the building are required by life safety code to have two exits. Exits are currently provided at each corridor end on the first floor and at the main entrance. The stairs at the north and south ends of the building provide egress from the second floor and the stairs at the south end also provide egress from the basement. These stairs do not qualify as exits since they only provide access to the first floor corridor and do not provide direct access to the building exterior.

Based on the unprotected, non-combustible construction of the building, and assuming frontage had been maintained around the entire building perimeter, the size of the school appears to have been constructed to the maximum allowable building area. The building is equipped with a sprinkler system that only provides partial coverage. Additional fire protection measures will need to be designed into any plans for an addition.

The fire alarm control panel is located in the main entry stair/lobby. Smoke detectors are located in corridors and other miscellaneous spaces. Horn/strobe type notification devices are located throughout the building but do not provide required coverage for all spaces and classrooms. Horn/strobe units are not mounted at required ADA height in all locations. Flow and tamper switches are provided at the sprinkler entrance.

Emergency egress lighting is provided by battery type units mounted in corridors and appear to be in fair condition. Additional egress lighting is required at exterior egress points. LED type exit signs are located throughout the building for marking of building egress. Additional signs are required in some locations.

Building Envelope

The existing exterior walls are constructed of brick masonry with stone accents. The southeast walls are generally in good structural condition but brick is in need of repointing and many sections of stone are deteriorated. No insulation was installed in the original wall construction but some insulation has been added above ceilings in areas where roof reinforcing was done. Even with this added insulation, the walls have insufficient thermal value. The original windows were replaced with double-hung units that have insulating glass but these windows are now very difficult to operate and there is concern about sashes that may fall out if opened. According to record documents, sections of the roof were upgraded around 1994 and 2000 with an EPDM membrane system with rigid insulation of sufficient thermal value. The nearly twenty-year-old roof is approaching the end of its maintainable life.

Mechanical / Plumbing Systems

Longfellow School is not currently equipped with a boiler. Steam is delivered to the school from the nearby Deering High School boilers. Underground steam piping enters Longfellow through the wall of the building nearest the high school. Piping distributes steam to unit ventilators located throughout the building through steam piping that is located around the perimeter of the building. An electric steam condensate pumping station is also located in the steam entrance pit. It is in fair to poor condition and appears to be beyond its expected useful life. The steam distribution piping appears to be in fair condition and is original to the building and much of it is covered with asbestos insulation. Space temperature control is achieved through individual thermostats located in each of the zones throughout the building.



Deering High School boilers



Underground steam piping



Electric steam condensate pumping station



Water heater

There is a unit ventilator located along the perimeter wall in each classroom. These units are in fair to poor condition, but operable. They are very inefficient and beyond the end of their expected useful life. Roof-mounted exhaust fans provide exhaust airflow for the toilets and general exhaust for the building. The building is also equipped with gravity ventilators on the lower roofs above the gym and kindergarten classrooms to relieve air from the building.

Longfellow School was recently retrofitted with low-flow plumbing fixtures throughout the building, which are in good condition. An electric water heater provides domestic hot water for the lavatories and sinks throughout the building depending on the season. The water heater is in good to fair condition.

Electrical/Security /Communications Systems

The existing building electrical system is fed underground to a transformer located in a vault. The electrical service is at 120/208V, 3-phase. A fused distribution panel and fused disconnect switches feed branch panels. Information provided from CMP indicates an approximate peak demand of 160 amps (57 kVA) on the service. The service entrance equipment appears to be beyond its useful life.

Lighting in classrooms is recessed-lens fluorescent or pendant direct/indirect type fixtures. Wall type occupancy sensors are utilized for energy savings in some classrooms and other miscellaneous spaces to turn off lights when the spaces are not occupied. Wall type sensors for this application do not provide adequate coverage for the space and may result in false tripping of lights. In general, lighting throughout the building is recessed lens 2x4 type fixtures. Miscellaneous older type pendant fixtures remain in some rooms and corridors. The gym lighting has been retrofitted with a high bay type high performance fluorescent fixture for energy efficiency.

Exterior perimeter lighting is provided by wall packs and flood lights. The existing cobra head type street lights and flood lighting do not appear to provide sufficient illumination to meet Illuminating Engineering Society of North America (IESNA) recommendations for parking and pedestrian areas during night events at the school.

The facility is protected with an intrusion detection (security) system consisting of a keypad and motion sensors and door contacts throughout the building.

Communications systems include intercom, telephone and Wi-Fi in classrooms. The network systems are not located in dedicated spaces with separate climate control. One wall-mount data rack is located in the library above book shelves and is only accessible with a ladder.

Site Circulation and Parking

The school and associated amenities are located along Stevens Avenue. The rear of the building can also be accessed by way of a large staff/student parking lot (approximately 168 spaces) that currently serves Deering High School and is accessed from Leland Street.

Due to the small size of the Longfellow enrollment district and the school's central location, there is a large population of children that walk to school, many of them with their parents. There are crosswalks and tip-downs located at the Pleasant Avenue/Stevens Avenue intersection (adjacent to the staff parking lot). There are also crosswalks at the ends of the streets intersecting with Stevens Avenue near the site, however many of them either have a tip-down on only one side or do not have any tip-downs at all. There are three mid-block cross walks in the following locations:

- Near the end of Concord Street (opposite the main entrance)
- At the end of Tremont Street (approximately 250 feet south of the main entrance)
- Near the end of Orkney Street (approximately 500 feet south of the main entrance)

A crossing guard was present during drop-off and pick-up at the Concord Street crosswalk. There is also a traffic calming device (raised speed table) at this crosswalk as well as at the Orkney Street crosswalk. A sidewalk and crosswalk were constructed in 2012 along the west side of the Deering High School staff/student parking lot for pedestrians coming from the neighborhood northwest of the school.

It was also noted that many pedestrians traveling to the site from the north cut through the staff parking lot by way of a pedestrian gate near the Stevens Avenue/Pleasant Avenue intersection, and there were concerns that this creates a potential safety hazard.

Students bicycling to and from school without adult supervision are discouraged by staff due to the heavy traffic volume along Stevens Avenue.

The school currently has approximately 54 on-site parking spaces (including six accessible spaces) located in a staff parking lot on the north side of the building, which is accessed from West Concord Street. There appears to be adequate parking for the 48 full-time-equivalent staff members. There is on-street parking available in the surrounding neighborhood, although much of it is marked as “one hour parking” (visitors to the site must utilize this on-street parking). The service/receiving area is also on the north side of the building and is accessed from the staff parking lot.



Parking area and northern entrance

The city-owned sidewalks along the perimeter of the site (on West Concord Street, Pleasant Avenue and Stevens Avenue) and on school property in front of the school are brick. Other sidewalks and hardscape on the site are asphalt concrete. The parking lot on the north side of the school is asphalt concrete and is severely alligatored and potholed and in need of replacement.

Oak Point Associates was present to observe traffic flow at the beginning and end of the school day in December 2012. There was only one school bus serving the school. In the morning, it dropped off students in the front of the school, along Stevens Avenue. In the afternoon, pick-up occurred in the parking lot, which contains a painted bus loop.

Parent drop-off occurred primarily along both of sides of Stevens Avenue and the surrounding neighborhood streets. The parents typically parked their vehicles and escorted their children to their classrooms, a process that took approximately 10-15 minutes on average. Some parents utilized the staff parking lot to drop off their children, but this is discouraged because the lack of available parking spaces causes parents to park in areas that constrict traffic flow into and out of the parking lot.

For afternoon pick-up, parents typically parked their vehicles along Stevens Avenue and the surrounding neighborhood streets and waited for their children in the playground on the south side of the school and at the main entrance. The staff parking lot was blocked off with traffic cones to prevent parents from parking in it and blocking the school bus and staff vehicles from exiting. However, some parents did arrive prior to the cones being set out and were able to enter the lot. Some parents also parked their cars in the Deering High School staff/student parking lot (Deering High School dismisses before Longfellow, so this parking lot was mostly vacant by the time Longfellow dismissal occurred).

Outdoor Play and Learning Spaces

Because of the school's proximity to Stevens Avenue and the location of the staff parking lot, the outdoor play and learning spaces are located to the south and west of the school building. These spaces are generally divided into three areas: the upper playground, the lower playground, and the outdoor learning garden. The school also uses the Deering High School athletic fields for physical education classes, which is located at the rear of the school, across the existing high school staff/student parking lot. Although recent improvements were made to the crossing point to improve safety, the physical education teacher requested a completely separate pedestrian bridge across the parking lot.



Upper playground

The upper playground is directly south of the school, and is where the majority of the playground equipment is located. The play equipment includes a cable net climber, a large composite play structure, three smaller climbing structures, and two sets of swings (one with four swings, the other with six). There is a fairly large open area between Deering High School and Longfellow School that is used for more active play (like ball sports). The upper playground has a wood chip safe play surface, which has historically washed down the sloped playground and caused maintenance issues (see Grading and Drainage section). A series of granite steps and curbing, gravel paving and terraced planting beds was installed to try to reduce the erosion, as well as to create a water play area.

Directly below the upper playground area is a pine grove that contains a natural play area, containing large logs, sticks and other natural materials for building. This area is enclosed by a woven wood fence. A wide asphalt walkway separates this grove from the other portion of the lower playground area. The walkway provides a way to access the back of the school by service vehicles, but is also striped with playground games (four square, etc.).



Natural play area

The lower playground area is directly to the west of the school building, between the outdoor learning garden and the Deering staff/student parking lot. There are two large sections of lawn, separated by a walkway leading to the Longfellow staff parking lot. The first is a sloped area directly adjacent to the concrete retaining wall that retains the learning garden, which is heavily used for sledding in the winter. The second is fairly flat and is used for active recreation. Adjacent to this second area is a full basketball court, which is fenced on the north edge only. The lower playground is bounded on the north side by residential properties, and there is a chain link fence that divides the school from the private yards. There is a grove of mature pine trees along this fence line.



Basketball court



Sledding hill

The outdoor learning garden is a courtyard that was originally the school playground, bounded on three sides by the school building. The west side is open, although because it is several feet above the grade of the lower playground sledding hill, there is a concrete retaining wall with a high chain link fence (with barbed wire) that separates the garden area from the playground. The learning garden can be accessed from several main floor classrooms, from the library, and also from a gated entrance near the parking lot service/delivery area. The learning garden features several at-grade and raised planting beds, a small frog pond, a greenhouse and shed, a pergola, seating and sculpture. It is utilized both for classroom study as well as for outdoor gatherings and appears to be very highly valued by the school community.



Pond at outdoor learning garden



Outdoor learning garden

Utilities and Drainage

Electrical and communications (telephone and cable) service runs underground from a utility pole along Stevens Avenue near the southeast corner of the building to an electrical room in the basement. There is an internal transformer vault adjacent to the electrical room, which appears to be beyond its useful life.

Heating for the building is provided by way of steam lines run from the heating system for Deering High School. The lines run beneath the playground from Deering High School to the southwest corner of the building. There is also an 8-inch gas main running beneath the playground from Stevens Avenue to beneath the Deering High School staff/student parking lot.

In addition to the gas main crossing the site beneath the playground, there is a utility corridor containing a 6-inch water line, an 8-inch combined sanitary sewer/storm drainage line, and a gas line that crosses the site from West Concord Street to Stevens Avenue beneath the parking lot, just off the north side of the building.

A 4-inch water line (for potable water) and 4-inch water line (for sprinkler service) are connected to the water line in the corridor and run to the northeast corner of the building. The potable line is of adequate size, but the sprinkler line is below the minimum line size required by current National Fire Protection Association (NFPA) Standards.

Sanitary sewer and roof runoff combine inside the building and exit the building just north of the main entrance via an 8-inch line. From there it is connected to the combined sanitary sewer/storm drainage line in Stevens Avenue.

Grading and Drainage

The grade on the east side of the school and the playground area generally slopes toward Stevens Avenue. On the south and west sides of the site, the grade generally slopes toward the Deering High School staff/student parking lot. A retaining wall approximately 4 feet tall separates the courtyard on the west side of the building from a hill that is used for sledding during the winter months. The base of the hill is approximately 75 feet west of the retaining wall. From the base of the hill, the grade flattens out significantly and slopes toward a catch basin located on the east side of the basketball court. On the north side of the building, the staff parking lot slopes to a catch basin located just off the north face of the building, near the main exit from the building into the parking lot. The catch basin is piped directly into the combined sanitary sewer/storm drain line that flows beneath the parking lot.

There are two main areas on site where poor drainage was observed. The first is in the parking lot, where the poor condition of the pavement and a drainage system dependent on a single catch basin result in standing water remaining in the parking lot for long periods of time, which causes ice accumulation in the winter.

The most notable drainage problem on site is referred to by staff and the public as “Lake Longfellow.” The single catch basin on the east side of the basketball court collects the runoff from most of the playground as well as the majority of the western side of the site. The collected runoff flows west by way of a 6-inch pipe beneath the Deering High School Staff/Student Parking Lot and the fields behind Deering High School into a combined sanitary sewer/storm drain system beneath Ludlow Street.

In addition to being undersized, conversations with City of Portland maintenance staff revealed that the portion of the pipe running from the catch basin on the east side of the basketball court to a catch basin in the Deering High School Staff/Student Parking Lot is plugged with tree roots. Furthermore, the sloped nature of the playground area, along with its large size, causes a significant amount of the wood chip surfacing to wash into the catch basin, further occluding the pipe. This causes standing water at the catch basin for most of the school year.

Public Input

At the charrette held on January 3, 2013, several priorities were expressed by the members of the public who attended. Oak Point Associates also received input from the teachers and staff at Longfellow. The priorities communicated included the following:

- Site safety and physical/visual control of main entrance from office.
- Bus/car circulation conflicts in the parking lot.

- Stormwater issues at the playground area.
- Minimize impact to the learning garden.
- Better integration of accessible entrance and access to all areas of building.
- Separate gym and cafeteria and centralized library.
- Appropriate spaces for Special Ed in centralized location near the populations they serve.
- Work rooms for staff and equipment.
- Appropriately sized music rooms.

Recommendations

Building Features

The recommended changes to the building would allow the main entrance to remain in its current location while modifications would provide for handicapped accessibility and improve security monitoring from the main office. Administrative spaces are proposed to be combined in a suite which would be located adjacent to the entrance. The main office portion of the suite would be reconstructed directly adjacent to, and at the same level as, the main entrance vestibule. Current classroom grade configurations would remain with pre-kindergarten through second grade on the first floor and third through fifth grade on the second floor. The north wing, which currently contains the library, multi-purpose room and small music room, would be reconfigured to provide space for a cafeteria that would have the capacity to seat one-third of the students, a new finishing kitchen and an appropriately sized Music room. An addition is proposed to be constructed adjacent to the north wing and would provide a new gymnasium with a performance stage, lockers and a gym teacher's office. An entrance lobby would be incorporated into the addition and would provide a secondary entrance for public events. The layout allows for after-hours, public use of the gymnasium, cafeteria and adjacent restrooms while locking off the remainder of the school.

Construction of an addition to the south wing would create space on the first floor for a larger library to meet current standards and for a teachers' room. The addition would also create space for a discovery lab in the daylit portion of the basement, provide ample basement storage and allow for each curriculum program to have its own designated room. A light well along the south wall of the south wing would provide natural light into the expanded art room and adjacent spaces.

Due to the reconfiguration of walls and the installation of new mechanical and sprinkler systems, it is recommended that new finishes be provided. The finishes would include all new flooring, ceilings, paint, lighting and millwork.

Accessibility and Life Safety

To conform to current *ADA Standards for Accessible Design*, three compliant accessible spaces should be included in the re-designed staff parking lot. Additionally, exterior accessible ramps are recommended at the main building entrance and at the new entrance lobby. An accessible route between the accessible parking spaces and the exterior ramps should be constructed.

Conversations with the City have indicated that there are plans to replace the existing brick walk along Stevens Avenue with a concrete walk. Curb cuts along the site will likely be constructed in the same general locations as the existing ones.

Reconfiguration of the main entrance is proposed to allow for handicapped access into the building. Construction of a ramp within the expanded entrance lobby would provide an accessible means to the first floor. Provision of an at-grade or ramped entrance at the new gymnasium lobby would also make that entrance accessible. A ramp adjacent to the gym lobby will allow for handicapped access to the remainder of the first floor. The installation of an elevator is recommended to provide access between the basement, first and second floors.

ADA toilet rooms are proposed for students and staff on all three floors. Fixtures, accessories and clearances will need to meet accessibility requirements. An accessible toilet room should also be provided in the new nurse's office and should be equipped with an ADA-compliant shower. Door hardware throughout the building is recommended to be upgraded with lever handles and doors reconfigured to meet required clearances. New signage that meets ADA requirements should be provided at rooms, stairs and exits.

Existing egress will need to be improved by adding exterior doors at the two stairs in order to provide direct egress to the building exterior. A third stair, constructed at the west end of the south wing, would provide egress, which will be required when the corridor is extended. The new stair would also improve circulation between the basement and first floor.

In order to allow for the increase in building area created by the gymnasium and library additions and to improve protection of the occupants and the structure, the coverage of the existing automatic sprinkler system should be expanded throughout the entire building and this system should be upgraded for compliance with the current NFPA 13 code. The fire alarm system, emergency egress lighting, and exit signage should also be upgraded to meet current NFPA code requirements.

Building Envelope

The existing exterior wall system is recommended to receive insulation to improve its thermal performance. The application of a rigid insulation and gypsum wall board finish system on the interior would appear to be the most appropriate approach in this situation. Repointing of exterior brick and restoration of deteriorated stone work is also recommended. Windows throughout the building should be replaced with units that will allow for easy operation and further improve thermal performance.

Roof replacement is not included in the budget for these proposed renovations and would be provided under a capital improvements project at a later date. Incorporating the roof replacement into the renovation and addition project could be considered if capital improvement funds allow.

New construction should incorporate thermal resistance values consistent with ASHRAE requirements into the design of the entire building envelope. A brick veneer, exterior wall system and aluminum windows and storefronts are proposed for the building additions.

A vegetated roof is proposed over the gymnasium and library additions. The vegetated layer would assist in storm water mitigation, contribute to building cooling on warmer days, extend the life of the roofing membrane and can be used as a teaching tool.

Mechanical/Plumbing Systems

The existing unit ventilators and exhaust ventilation systems should be removed, due to their age and poor condition, and a high efficiency heating and ventilating system should be provided. The new heating system is proposed to consist of three high-efficiency natural gas condensing boilers, which would operate at ultra high efficiencies when coupled with new terminal devices. Terminal devices could include radiant panels, fan coil units or fin-tube radiation, which would be located in each space and are designed to operate using low-temperature heating water (in the range of 90 deg F to 120 deg F). Boiler efficiencies exceeding 95 percent can be achieved with a system such as this. New heating water distribution piping is recommended to be installed and configured to accommodate the revised floor plans. The distribution piping should be well insulated to minimize stand-by losses associated with heating water distribution piping.

Energy Recovery Ventilators (ERVs) are recommended to provide ventilation to all the spaces in compliance with ASHRAE ventilation standards. The ERVs would pre-condition the incoming fresh outside air by extracting heat from the exhaust through the use of an air-to-air heat exchanger that prevents the outside and exhaust air streams from mixing. Fans located in the ERVs would distribute fresh air to each of the spaces and remove exhaust air through an above-ceiling ductwork system.

Air conditioning is recommended to be provided in selected spaces (offices, etc.) through the use of high-efficiency, environmentally friendly, refrigerant based systems, such as a variable flow refrigerant system or an air-to-air heat pump system. Outdoor condensing units are proposed to be located on the roof or at grade along the side of the building.

Additional sustainability features (in addition to the ERVs and high efficiency cooling systems) that are under consideration to be incorporated into the design are a solar domestic water heating system and a building energy management system. The solar heating system would consist of evacuated solar tube arrays located on the roof that would produce hot domestic water for use in the lavatories and sinks. Highly insulated tanks would be installed in the boiler room to store the heated water for use after the sun goes down. The energy management system would consist of a Direct Digital Control (DDC) system that would control all of the HVAC equipment in the building. Real-time energy usage would be monitored by the system and adjustments would automatically be made to the mechanical systems operations, without affecting occupant comfort, in order to maximize energy efficiency.

The existing plumbing fixtures will be salvaged and re-used since they are in good condition. A new high-efficiency domestic water heater will be provided and integrated with solar water heating system described above.

Electrical/Security/Communications Systems

Electrical service equipment should be upgraded due to age and should be sized to meet future loads associated with building renovations, including additional HVAC and elevator loads. Existing transformer vault should be eliminated if possible. Electrical equipment should be installed in dedicated electrical spaces. Electrical upgrades should include additional power for general classroom use and increased computer loads throughout the building.

Classroom lighting is recommended to be upgraded to include controls for daylight harvesting and to be enhanced for utilization of educational AV systems. Pendant-mounted direct/indirect, energy-efficient fluorescent fixtures are recommended to improve quality of light and flexibility for classroom AV systems.

Exterior lighting should include energy efficient LED and low glare type fixtures for parking and pedestrian areas. Lighting levels should be designed to meet current IESNA recommendations.

Building telecom design should include dedicated climate-controlled space for data/telephone systems and entrance facility. Classrooms are recommended to include wired and wireless network access, VoIP phone, intercom, interactive AV, and classroom sound enhancement systems.

Security systems should be upgraded to include access controls (card key system), CCTV cameras and intrusion detection coverage for the building. These systems are recommended to be integrated with district-wide systems for uniform monitoring and system administration. Reconstruction of the main building entrance would provide direct line of sight from the main office and create a controlled access point at the entry vestibule. The installation of a transaction window between the vestibule and the main office, along with the addition of access control door hardware, would enable staff to communicate with visitors before permitting entry into the building.

Site Circulation and Parking

The location of the recommended building addition eliminates the possibility of continuing to use the existing bus loop in the staff parking lot. Conversations with the City of Portland Traffic Department have indicated that it is acceptable to have the school bus pick up students along Stevens Avenue (if the project is State funded, this would have to be revisited with the DOE). The bus would wait on a side street and be radio-contacted by the school when the students are ready to be picked up. This would reduce the amount of time the bus will be stopped on the street to approximately the same amount of time it is stopped on Stevens Avenue during morning drop-off.

In addition to discontinuing use of the painted bus loop, the location of the building addition means that, even with a slight reconfiguration of the remainder of the parking lot, the total available number of parking spaces would be reduced to 24 (including three accessible spaces). The 27 parking spaces that are being eliminated from the staff parking lot are recommended to be relocated into the Deering High School staff/student parking lot. Additional lighting would be added to the walkway leading from this parking lot the school and the entrance modified on the southwest side of the building to alleviate staff concerns about the extra distance they will need to walk as well as any safety concerns.

Pending the recommendations of a subsurface investigation, all existing paved surfaces and sidewalks slated to remain are recommended to be reconstructed.

Outdoor play and learning spaces

The proposed location of the building addition minimizes the impact of new construction on the outdoor play and learning spaces. The enlarging of the south wing to create a double-loaded corridor and classroom layout reduces the size of the outdoor learning garden, and the garden would need to be reconfigured as a result. An accessible entrance onto the garden should be provided, and views from reconfigured spaces (like a cafeteria and library) should be considered.

One of the desires expressed for playground improvements was an increase in natural play areas. Small areas are proposed at the edge of the existing upper and lower playgrounds, which would not require the relocation of existing play equipment and would take advantage of existing vegetation. Additional tree planting (for shade) and seating should be incorporated at all playground areas.

Utilities

Electrical and communications (telephone and cable) service should be upgraded and a new transformer provided. It is also recommended that lighting be added in the staff parking lot and along the walk between the Deering High School parking lot and the rear entrance to Longfellow. At the request of the School Department, a pad and conduit has been scoped for a future generator (the exact size of the pad will need to be coordinated with the generator model the city anticipates using). The existing steam lines running between the building and Deering High School would be disconnected and a new gas service provided from either the gas main running beneath the playground or the line running beneath the parking (the final determination would need to be determined by Unutil, the current natural gas supplier for the City).

The portion of existing water service line that runs beneath the parking lot is recommended to be removed from northwest side of the property to the existing shut off valve, located near the edge of Stevens Avenue. New fire protection and potable water service lines would be provided from the shut off valve to the building. A new service line would be provided beneath West Concord Street that would be connected to an existing water main beneath Pleasant Avenue. The existing sanitary sewer and gas lines running through the parking lot are recommended to be relocated to around the building addition.

It is recommended that the existing roof drains be separated from the sanitary sewer line and a new outlet provided. Once they are separated, the sanitary sewer line will have adequate capacity to accommodate both the existing building and the proposed additions.

To comply with federal regulations, the City is in the midst of a project to separate the storm drainage and sanitary sewer flows. Because of this, all new roof drain and foundation drain lines from the building additions cannot be piped directly into the combined lines. Instead, the lines should be connected to the on-site storm drainage infrastructure.

Grading and Drainage

Storm drainage infrastructure should be added to the parking lot, and stormwater treatment for new impervious surfaces provided on the site as required by both City and State requirements (current City of Portland requirements are more stringent than state requirements as they relate to triggers for stormwater treatment systems being required). Examples of Low Impact Development stormwater treatment systems include bioretention areas to collect runoff from the staff parking lot and vegetated roofs on portions of building additions. Conversations with stormwater management representatives for the City have indicated that there is a high degree of likelihood that the City will be implementing a stormwater fee system for impervious surfaces on a site. Any stormwater treatment provided on the site would likely offset a portion of this fee.

To address flooding problems in the rear of the site ("Lake Longfellow"), it is recommended that the existing storm drain line be replaced from the catch basin on the northeast side of the basketball court to the catch basin in the Deering High School staff/student parking lot with a 12-inch line. Also, a sedimentation basin should be added along the western edge of the playground to prevent the wood chip surfacing from washing into downstream catch basins.

Site Elements

The existing concrete vault located near the entrance to the parking lot is recommended to be removed and a larger storage shed (approximately 144ft²) be provided that can be used to house exterior tools and gasoline-powered equipment, such as snow blowers and small lawn mowers.

A new bicycle rack, flagpole, and seating area are proposed at the reconfigured main entrance.

Longfellow Elementary School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
Pre-K	1		865			865	15	15	Pre-K	1		1000			1000	15	15
Kindergarten	1		1200			1200	18	18	Kindergarten	1		890			890	18	18
Kindergarten	1		960			960	18	18	Kindergarten	1		875			875	18	18
Kindergarten	1		800			800	18	18	Kindergarten	1		855			855	18	18
1st - 2nd Grade	5		800			4000	20	100	1st - 2nd Grade	6		800			4800	20	120
1st - 2nd Grade	1		820			820	20	20	3rd Grade	3		800			2400	23	69
3rd Grade	3		800			2400	23	69	4th Grade	1		815			815	23	23
4th Grade	2		800			1600	23	46	4th Grade	2		800			1600	23	46
4th Grade	1		835			835	23	23	5th Grade	1		820			820	23	23
5th Grade	2		800			1600	23	46	5th Grade	2		800			1600	23	46
5th Grade/Band	1		820			820	23	23									
K-2 Resource	1		450			450			K-2 Resource	1		460			460		
Special Education 3-5	1		800			800			Special Education 3-5	1		730			730		
Reading	1		380			380			Reading	1		575			575		
OT/PT/ELL/G&T	1		630			630			OT/PT	1		575			575		
									ELL	1		755			755		
									G&T/ Discovery	1		1525			1525		
Speech	1		200			200			Speech	1		165			165		
Art	1		845			845			Art	1		995			995		
Music	1		495			495			Music	1		1165			1165		
Library	1		1660			1660			Library	1		1980			1980		
Gym/Cafeteria	1		2400			2400			Gym	1		5300			5300		
									Locker Rooms	2		415			830		
									PE Office	1		115			115		
									PE Storage	1		165			165		
									Cafeteria	1		2680			2680		
									Kitchen	1		1000			1000		

Longfellow Elementary School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
Stage/PE Office	1		410			410			Stage	1		680			680		
Rec Office/ Storage	1		70			70			Rec Office/ Storage	1		165			165		
Main Office	1		485			485			Main Office	1		410			410		
Principal	1		285			285			Principal	1		240			240		
Assistant Principal/Conference	1		210			210			Assistant Principal	1		140			140		
									Conference	1		375			375		
									Workroom	1		460			460		
Social Worker	1		170			170			Social Worker	1		115			115		
Intervention Office	1		235			235			Intervention Office	1		125			125		
Nurse	1		275			275			Nurse	1		410			410		
Time Out	1		80			80											
Team Meeting/Tech Office	1		340			340											
Teachers' Room	1		365			365			Teachers' Room	1		865			865		
									Book Room	1		200			200		
CAPACITY						396			CAPACITY						396		
TOTAL NET AREA (SF)						26685			TOTAL NET AREA (SF)						38855		
Structure/Circulation/Mech/Utility						16103			Structure/Circulation/Mech/Utility						21000		
TOTAL GROSS AREA (SF)						42788			TOTAL GROSS AREA (SF)						59855		
GROSS SF PER STUDENT						108			GROSS SF PER STUDENT						151		

Buildings for Our Future
Portland Public Schools
Elementary Schools, Grades PreK-5

Oak Point Associates

**Longfellow Elementary School
Project Budget**

Implementation of the "facility equity model" with energy and sustainability upgrades, outdoor curriculum enhancements and building and site improvements.

A NEW CONSTRUCTION

Renovation/Reconfiguration	\$ 4,961,738
New Construction/Addition	\$ 2,740,210
Demolition	\$ -
Built in Equipment	\$ 593,000
Site Development	\$ 962,400
Subtotal	\$ 9,257,348

B ADMINISTRATIVE COST & RESERVE

Temporary Classrooms	\$ -
Advertising/Insurance/legal	\$ 55,000
Bid Contingency 5%	\$ 462,867
Construction Contingency 5%	\$ 462,867
Subtotal	\$ 980,734

C FEES AND SERVICES

Architect/Engineer	\$ 781,315
A/E Reimbursable	\$ 39,400
Commissioning	\$ 56,762
Environmental Permitting	\$ 18,760
Life Cycle Cost Analysis	\$ 10,000
Surveys/Soils/Testing	\$ 39,500
Clerk of the Works	\$ 73,500
Subtotal	\$ 1,019,237

D TOTAL PROJECT COST

\$11,257,319

PROJECT TIMELINE - RECOMMENDATION

LONGFELLOW ELEMENTARY SCHOOL

		State Funding	
2014	July	Concept Design	
	August		
	September		
	October		
	November		
	December		
2015	January		
	February		
	March		
	April		
	May		
	June		Referendum
	July	Design Development	
	August		
	September		
	October		
	November		
	December		
2016	January	Bid Documents	
	February		
	March	Bid	
	April		
	May	Contract	
	June		
	July	Construction (Renovation)	
	August		
	September		
	October		
	November		
	December		
2017	January	Construction (Addition)	
	February		
	March		
	April		
	May		
	June		
	July	Construction (Renovation)	
	August		
	September		Occupancy
	October		
	November		
	December		

Harrison Lyseth Elementary School

Year Opened:	1960
Major Addition:	1965
Number of Stories:	One
Building Area:	50,475 gsf (Main Building) 1,250 gsf (Portable Classrooms)
2012/2013 Student Enrollment:	531
Capacity:	502 (Based on 2012/2013 grade configurations and district class size maximums)
2012/2013 Full-Time-Equivalent	
Staff Members:	67 (Lyseth) + 75 (Lyman Moore) = 142 Total
Site Area:	25.1 Acres (total campus area)
Zone:	Schools and Driveways: R-2 (Residential) Playfields: R-OS (Residential Open Space)
Setbacks:	25 feet (Front and Rear Yards) 16 feet (Side Yard for 2-1/2 Story Structures) 20 feet (Side Yards on Side Streets) 5 feet (for accessory detached structures less than 144 ft ²)
Additional Site Constraints:	Site is in Fall Brook watershed (Fall Brook is classified as an “Urban Impaired Stream” by the Maine DEP) Portland Water District right-of-way runs along south side of site Fall Brook Branch Sewer right-of-way runs along west side of site
Total Available Parking Spaces	
(approximate):	137 (including six accessible spaces)

A summary table identifying current and proposed program spaces at Harrison Lyseth Elementary School is contained at the end of this section of the report, along with a budget summary and timeline. Existing and proposed site plans, floor plans and massing plans can be found in Appendix B.

Existing Conditions

The site is a campus made up of Harrison Lyseth Elementary School, Lyman Moore Middle School, and a sports field complex maintained by the City (referred to as the “North Deering Playfield”). The two schools share parking, fields, vehicular and pedestrian circulation routes, site utilities and certain building utilities. Lyman Moore was constructed in 1954 and 1959 (in two phases), and Lyseth followed in 1960, with an addition in 1965. Lyseth School is a one story building housing K-5 students in an “E” shaped configuration (the northernmost wing and its connector were added in 1965).

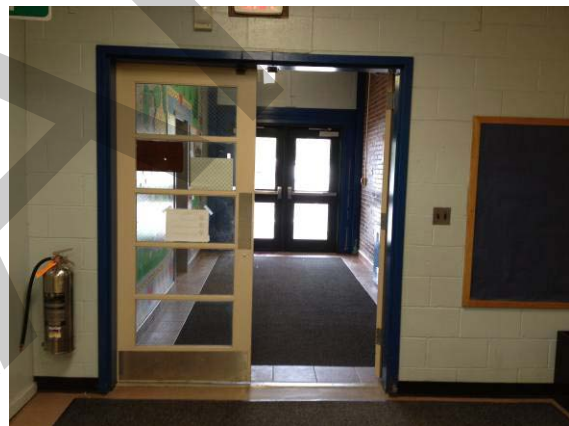
Building Features

In addition to the main school building, one portable classroom building which houses ELL and Literary Support classrooms is located in the courtyard between the middle wing and west wing of the school. Several of the Special Education (SpEd) classrooms are not properly outfitted and are located haphazardly throughout the building, and many of the grade-level classrooms are not located together in the same wing. This makes collaboration and sharing of materials difficult. Reorganizing the classrooms, SpEd rooms and providing additional support space (i.e.: testing rooms and an office for the school psychologist) would greatly improve the functionality of the building.

The main entry has a non-controlled airlock entering the southwest corner of the building. Within the airlock is a conference room, entered through a reading room. The main office is located diagonally across from the entry. Monitoring guests coming into the building is difficult due to glass block walls that surround the main office, blocking view of the entry. The main office consists of an administrative area, Principal's office, Assistant Principal's office, and toilet room. The space is too small for visitor seating, forcing the waiting area out into the hallway.



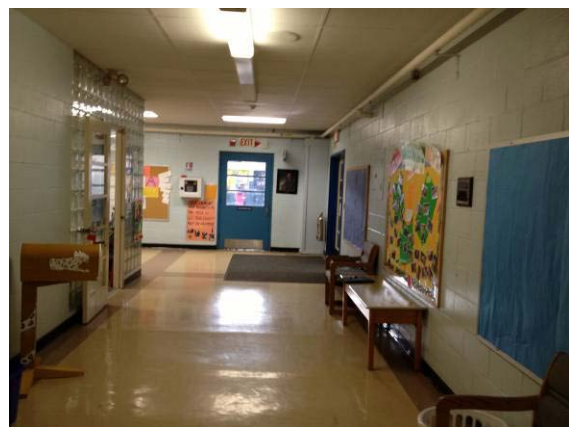
Main entrance and ADA ramp



Main entrance vestibule



View of office from main entrance



Hallway waiting area

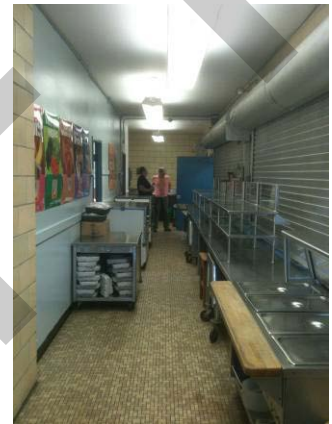
Directly upon entry into the building is a double-loaded main corridor that runs east-west and accesses the three north-south wings within the building. The first room to the south is the multi-purpose room, used as a cafeteria and a gymnasium. Setting up and breaking down for lunch is very disruptive and time-consuming, limiting the ability to more comprehensively schedule the physical education curriculum. Behind the multi-purpose room is a SpEd crisis area used by ISP (Intensive Support Program), a storage area with access to the boiler room, a toilet room shared by ISP and the kitchen staff, and a warming kitchen. Students must be escorted through the multi-purpose room to get to the SpEd crisis room, which is distracting and upsetting to others. There is a storage room to the east that houses tables, trash, custodial equipment and gym equipment. The gym office is located down the hall through the custodial office.



Multi-purpose room



SpEd crisis room



Warming kitchen

Across the hall from the multi-purpose room on the north side of the building are girls' and boys' group toilets. They are large and can be a distraction to students. A set of double doors, located between the toilet rooms, exits to the portable classroom housing ELL and Literacy Support. Also located in this corridor



Credit Union

is a small Speech room & Speech office, K-2 ISP, social worker's office, Gifted and

Talented (this space used to be an exit vestibule and is not a suitable classroom), teachers room, book closet, one second grade classroom, one grades two/three looping classroom, two first grade classrooms, one grades one/two looping classroom, one fourth grade classroom, a second set of girls' and boys' toilet rooms and another exit to an outdoor garden courtyard. At the far end of the corridor is a vestibule exiting to the playground area and a credit union that is used by the students.



Portable classrooms

The first wing to the north of the main entrance is a double-loaded corridor wing housing four kindergarten classrooms (none of them have toilet rooms), a first grade classroom, a shared K-5 Resource classroom with a low partition divider, and a grades 3-5 ISP classroom. ISP is located in an existing traditional classroom that is not properly designed for this population. Also, the computer main frame is in this space and has wires that hang down within children's range. The toilet is located across the hall and two small SpEd crisis rooms are located through the gym next to the kitchen. Bringing children to these spaces through the hallways while in crisis mode is very distracting to other children and creates a privacy issue for the child.

The second wing is located midway down the main corridor. It is a double-loaded corridor housing the nurse, a second social worker, the Art classroom, library, a second grade classroom and three grades two/three looping classrooms. The nurse's office needs to be located closer to the main office for coverage and ease of dismissal of sick children.



OT Classroom

The third wing is a double-loaded corridor housing staff toilets, Occupational Therapy (OT), Music, SpEd, two third grade classrooms, three fourth grade classrooms and four fifth grade classrooms.

Accessibility and Life Safety

The Lyseth / Lyman Moore campus has six standard width parking spaces on site that are marked as accessible: four in the staff/visitor parking lot (that serve Lyman Moore) and two in the Lyseth staff parking lot (that serve Lyseth); however, only the ones in the staff/visitor parking lot have adjacent access aisles. Current *ADA Standards for Accessible Design* guidelines require a minimum of seven accessible spaces with the current parking lot configuration, including at least two van-accessible spaces. Compliant spaces must be adjacent to an appropriately sized access aisle.

A ramp at the building exterior provides an accessible main entrance. Steps exist at all other building exits and no ramps are provided in these locations. A ramp provides access to the portable classrooms, but the nearest entrance into the main building is not accessible. All spaces within the main school building are on the same level and, with a few exceptions, an accessible route exists throughout the building.

Most of the door hardware in the building is knob style and does not meet ADA grip requirements, and required clearances for door operation are not met in some locations. Room signage does not meet ADA requirements for tactile font, Braille and location. Single-stall, staff toilet rooms located within the classroom wings are designed to meet ADA requirements but are missing grab bars. Other single-stall

toilets for staff and within the nurse's office are not sized for accessibility. Multi-stall toilet rooms for student use have been recently renovated for ADA compliance.

Based on the unprotected, non-combustible construction of the building and the frontage around the building perimeter, the size of the school appears to exceed the IBC allowable building area. The construction documents for the original building indicate that it was slightly larger than the building area that is currently allowed by code. The major addition appears to have been constructed so that it was separated from the original building by a fire wall. This fire wall does not meet the separation requirements of the current code. There is currently no automatic fire protection sprinkler system within the building, although there is a fire alarm system. Additional fire protection measures will need to be designed into any plans for an addition.

The fire alarm control panel is located in the main lobby. Smoke detectors are located throughout the corridors and other miscellaneous spaces. Heat detectors are utilized for initiation devices in some classrooms and utility spaces. Horn/strobe type notification devices are located throughout the building including classrooms. Horn/strobe units are not ADA compliant.

Emergency egress lighting is provided by battery type units mounted in corridors and appear to be in good condition. Additional egress lighting is required at exterior egress points. LED type exit signs are located throughout the building for marking of building egress.

Life safety egress requirements are achieved by the building layout with adequate means of egress from all spaces, paths to exit access corridors and exits at the end of each of four corridors, at the center and courtyard access points of the long connecting corridor and at the main building entrance.

Building Envelope

The existing exterior walls are constructed of a concrete masonry unit (CMU) with brick veneer system. The walls are generally in good condition and provide a durable finish on both the exterior and interior. No insulation was installed between the brick and CMU when the walls were constructed and therefore these walls have insufficient thermal value. The original windows were recently replaced. The new insulated glass windows are aluminum and have a single operable sash below and fixed glazing above. The roof was upgraded in 2010 with an EPDM membrane system. It is assumed that sufficient rigid insulation was installed as part of the roofing system.

Mechanical/Plumbing Systems

Lyseth is not currently equipped with a boiler. The school is connected to the nearby Lyman-Moore Middle School. Underground steam piping enters Lyseth beneath the multi-purpose room through the wall of a utility trench that runs beneath the perimeter of the school. The piping distributes steam to unit ventilators (UVs) located throughout the building. The steam piping appears to be covered with asbestos insulation. An electric steam condensate pumping station is also located near the steam entrance. It is in poor condition and leaking, and appears to be beyond its expected useful life. The steam distribution piping appears to be in fair condition and is original to the building. Space temperature control is achieved through individual thermostats located in each of the zones throughout the building.



Utility trench beneath building

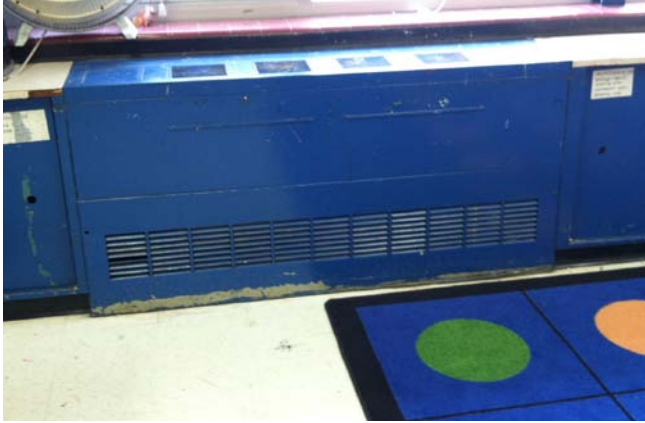


Steam piping



Electric steam condensate pumping station

There is a UV located along the perimeter wall in each classroom. These units are in fair to poor condition, but operable. They are very inefficient and beyond the end of their expected useful life. Other spaces in the building are heated with convectors, which are also at the end of their expected useful life. The multi-purpose room is equipped with an air handling unit that provides ventilation and heat. It is also at the end of its expected useful life. Several roof mounted exhaust fans provide toilet room exhaust and general exhaust for the building. These fans are in fair condition but at the end of their expected useful life.



Unit ventilator



Convactor

Lyseth School is has recently been retrofitted with low-flow plumbing fixtures throughout the building, which are in good condition. An electric water heater provides domestic hot water for the lavatories and sinks throughout the building. The heater is in fair condition.

Electrical/Security/Communications Systems

The existing building electrical system is fed underground to a transformer located in a vault within the building. The electrical service is rated for 800 amps at 120/208V, 3-phase. Information provided from CMP indicates an approximate peak demand of 190 amps (68 kVA) on the service. The existing main switchgear is located in the custodial office/storage space. The service entrance and branch panels appear to be in fair condition. Branch panels are distributed in each corridor, recessed in walls and generally remain unlocked. The power feed to the portable classroom building is overhead from a utility pole at the west side of the building.



Electric water heater

Lighting in classrooms is recessed fluorescent, lens-type fixtures with energy efficient lamps and ballasts. Occupancy sensors are utilized for energy savings in most classrooms and other miscellaneous spaces to turn off lights when the spaces are not occupied. In general, lighting throughout the building is recessed lens 2x4 type fixtures with only a few miscellaneous older type fixtures remaining. The lighting in the multi-purpose room has been retrofitted with a high bay type high performance fluorescent fixture for energy efficiency.

Exterior perimeter lighting is provided by LED-type flood lights that have been installed in the last two years. The existing flood lighting does not appear to provide sufficient illumination to meet Illuminating Engineering Society of North America (IESNA) recommendations for parking and pedestrian areas during night events at the school.

The facility is protected with an intrusion detection (security) system consisting of a keypad and motion sensors throughout the building.

Communications systems include intercom, telephone and Wi-Fi in classrooms. The network systems are not located in dedicated spaces with separate climate control. One wall-mounted data rack is located in a faculty bathroom. Laptop charging carts (COW) are typically parked in the corridors and locked to the wall.

Site Circulation and Parking

The main site entrance, on Auburn Street, has signalized crosswalks, and there are sidewalks along the north and south sides of the access drives leading to Lyseth, with tip-downs and crosswalks where they cross Junior Street and the Lyman Moore staff parking lot. There are also several pedestrian pathways into the site: two on the south side of Lyman Moore, one on the east side of Lyseth (near the playground), one at the southeast corner of the site from Allen Avenue (a Portland Trails link), and one on the north side of Lyseth.

Vehicular access to the site is primarily from Lyseth-Moore Drive, which is connected to Auburn Street. Many of the on-site amenities, including parking and playfields, are shared by both facilities. Lyseth-Moore Drive ends just west of Lyman Moore Middle School and changes into an approximately 24 foot wide one-way road that serves the Lyman Moore bus drop-off/pick-up area, all of the parking on site, the Lyseth bus loop, and the Lyseth parent loop. There are very few wayfinding signs on site, making it difficult for visitors to determine how to properly access Lyseth from Lyseth-Moore Drive (it is unclear where the road ends and the access drives start).

The existing receiving area and the dumpsters for the school are located on the east side of the multi-purpose room (on the southwest corner of the building) and are accessed from the staff parking lot. There is a paved emergency and maintenance access way around the entire perimeter of the school building.

The site has 137 parking spaces (including six accessible spaces) split between three parking lots: a staff/visitor parking lot north of Lyman Moore (73 spaces, including four accessible spaces), a parking lot on the east side of Lyman Moore primarily used for Lyman Moore staff members (approximately 32 spaces), and a parking lot on the south side of Lyseth primarily used by Lyseth staff members (32 marked spaces, including two accessible spaces). The site does not have enough marked parking spaces to accommodate all of the full-time-equivalent staff members for the two schools.



Pavement on north side of building

The lack of marked parking spaces causes visitors and some staff members to park along the sides of the entrance and exit drives (partially on the road and partially on the shoulder) as well as up against the south side of the school in the Lyseth staff parking lot. The parking striping in the staff/visitor parking lot and the Lyseth staff parking lot is faded and difficult to see. The Lyman Moore staff parking lot does not have any visible striping.

The majority of the sidewalks, pavement and curbing on the site are asphalt concrete. The asphalt concrete pavement at staff parking lots, Lyseth bus loop, Lyseth parent loop and all of the asphalt concrete pavement/walks adjacent to Lyseth are severely alligatored and potholed and in need of replacement. Furthermore, the only separation between the sidewalks and Lyseth bus loop is a wood guard rail, and many of the horizontal members between the posts are missing.



Bus Loop and sidewalk at main entrance

Oak Point Associates was present to observe traffic flow at the beginning and end of the school day in December, 2012 and January, 2013. It was observed that student drop-off and pick-up occurs in the loops in front of the school. There were four school buses in the morning and the afternoon. There were also a fair number of children who walked to the school from the surrounding neighborhoods (many who were not accompanied by an adult) who utilized the pedestrian access points on the north, east and south sides of the site.

Bus drop-off and pick-up occurred in the bus loop. Due to safety concerns relating to children running between the buses, the buses queued up beyond the main entrance for afternoon pick-up. It was noted that parked cars in the entrance and exit drives constricted the drives to the point that the buses had difficulty fitting through, and it was reported by the City's Public Services Department that this is exacerbated in the winter months where snow has already constricted the widths of the drives.

In the morning, parents generally parked on both sides of the parent loop and escorted their children into the school, which took approximately 10 minutes. This created a significant bottleneck on site, as the parent loop (which is approximately 24 feet wide) is also the only exit from the site for parents dropping their children off at Lyseth and is too narrow to allow a vehicle to easily fit between the cars

parked on both sides. As a result, parents who had already dropped off their child were forced to wait for other parents to move their cars before they could exit the site or cut through the staff/visitor parking lot. To avoid getting stuck in the traffic, some parents parked illegally in other places on site to escort their children into the school.

Afternoon dismissal was staggered: bus children were dismissed first, followed by children walking home and those being picked up in cars. It was noted by parents that there are occasions where a late bus has further delayed dismissal of the children not riding the bus. Many parents waiting to pick up their children parked their cars and waited by the flagpole in the turf area between the bus loop and the parent loop or near the multi-purpose room. Some parents, however, waited in their parked vehicles. A lack of available parking and space within the parent loop caused parents to park in any available location, including in the exit of the Lyseth staff parking lot, in the Lyman Moore staff parking lot drive aisles and along both sides of the entrance and exit drives. Furthermore, many of the children who were not accompanied by an adult did not safely cross the entrance drives to get to their parents waiting in their vehicles, frequently running between the parked cars. Traffic generally backed up on the site until the cars parked in the parent loop departed, allowing all other traffic to exit behind them.

Outdoor Play and Learning Spaces

Outdoor play and learning spaces at Lyseth include playgrounds, outdoor gardens, an amphitheater, athletic fields, and walking trails.

The “E” shaped configuration of the school creates two courtyard spaces between the wings. The western courtyard is paved with asphalt concrete (striped with some playground games), contains the portable classroom building and several bicycle racks. It is not otherwise utilized for outdoor play or learning space. The eastern courtyard is also paved with asphalt concrete (also striped with playground games), but has three outdoor learning garden spaces, which are edged with granite curbing. The largest one is in the center of the courtyard, with two smaller garden areas against the classroom wing walls. The gardens contain a mix of woody and perennial plantings, seating, boulders, a wood bridge, and stepping stones. Although there is some classroom use of these gardens (K/1/2), teachers reported that the use of this area during the school day is distracting to classes within the building.



Outdoor learning garden



Circular garden

There are several garden areas at the perimeter of the school building. At the southwest corner of the school are several raised wooden beds, planted with vegetables. There is a garden made up of concentric rings of brick and wood slices with granite bench seating at the northwestern corner of the building, as well as several trees and perennial plantings (along the edges of the walkways) in that area. At the northeast corner of the site, there is a small area of sloped lawn adjacent to the paved area around the building, which is used by the kindergarten and first grade classes for sledding in the winter. At the base of the slope are several raised planter boxes which are classroom gardens. At the end of the classroom wing is a small outdoor classroom / amphitheater space that is made of granite blocks and boulders. There is also a small circular gathering area at the walkway leading from Bartley Avenue, which is constructed of granite slabs laid both horizontally and vertically.

Recess for the younger grades (K/1/2) utilizes the space to the east and north of the school, however the older grades primarily use the hard court to the east and southeast of the school, plus the playground equipment area, which is located to the east of the baseball field and to the south of the hard court area. The hard court is striped for four square, hopscotch, and two half-court basketball courts with two basketball goals. The public expressed the concern that there is too much asphalt concrete pavement in this area (to the east of the school) and too much “dead space”. The playground area includes a cable net climbing structure, a composite play structure with related freestanding equipment, a balance beam, a ball toss, a wood platform, a wooden ship structure, six swings (2 which are toddler bucket swings), two picnic tables, and two benches. The swing set does not have an adaptive (accessible) swing. The playground surface is wood chip mulch. There are trees to the east of the playground area that provide some morning shade. There is a woodland trail (the “Pine Grove Trail”) that is on the Portland Trails network, which runs from Lyseth School through the woods and across Allen Avenue to Pine Grove Park. It is approximately 0.5 miles long and was designed by Lyseth 3rd graders. It provides the opportunity for nature walks and woodland play.



Composite play structure



Athletic fields

The athletic fields to the south of Lyseth are shared with Lyman Moore Middle School and are also heavily used by the community. They include a baseball field, two softball fields, and field areas (in the outfields) used for football, soccer and field hockey. A 2010 Athletic Facilities Task Force determined

that drainage and irrigation improvements, as well as a new baseball infield, are needed. The report also stated that realigning the fields might result in a more efficient layout, with more rectangular field use.

Utilities

Electrical and communications (telephone and cable) service runs overhead along the northern side of the site to a utility pole on the northwest corner of the building. From there, communications service runs overhead to the building and electrical service runs underground to the existing transformer, which is located in an interior vault near the center wing of the building.

Water service is provided by way of a 6-inch line serving both Lyseth and Lyman Moore that is connected to the 48-inch main that runs along the south side of the site. From there, it is routed into Lyman Moore, where it is split into three lines: potable service for Lyman Moore, fire protection service for Lyman Moore and potable service for Lyseth. The potable water line for Lyseth is routed through Lyman Moore and exits as a 3-inch line from the northeast corner of the building (near the Lyman Moore mechanical room). From there it is routed to the Lyseth mechanical room located beneath the multi-purpose room. An 8-inch water main enters the site from Junior Street and serves a fire hydrant on the northeast of the site, near the staff/visitor parking lot.

Steam lines that provide heat for Lyseth are run adjacent to the water line from the northeast corner of Lyman Moore to the mechanical room beneath the multi-purpose room. The boiler inside Lyman Moore is fed by a natural gas line that runs beneath Lyseth-Moore Drive and the Lyman Moore bus drop-off. There is also an oil tank located inside Lyman Moore that provides a secondary fuel source for the boiler.

Sanitary sewer and roof runoff each exit the building in two locations: on the south side of the building opposite the center wing and on the southwest corner of the building near the multi-purpose room. At each location, the roof runoff and sanitary sewer exit the building separately and combine in sewer manholes just outside the building. From there, the combined lines flow into a sewer main that runs along the north side of Lyman Moore and ultimately discharges into a sewer main running along Fall Brook, on the west side of the site.

Drainage and Grading

The site is generally flat and drains to the west. However, the grade rises up significantly in the northeast corner of the site from the edge of the building to the property line.

Most of the runoff on the site is collected by two separate drainage systems and conveyed to a gravel wetland located on the west side of Lyman Moore (constructed in 2011/2012 to provide some treatment of the runoff). One system collects runoff on the west side of Lyseth, the staff/visitor parking lot and the eastern part of Lyseth-Moore Drive. The other system collects runoff from offsite areas to the northeast as well as the majority of the area surrounding Lyseth, the playfield complex, staff parking

lots, the tennis and basketball courts near Lyman Moore, and the area on the south side of Lyman Moore.

Several areas of poor drainage and significant water ponding were noted around Lyseth, in the Lyman Moore staff parking lot, and the northeast corner of the staff/visitor parking lot. The majority of these are a result of very poor pavement conditions preventing the runoff from reaching nearby catch basins. Ponding in the vicinity of the bus loop and parent loop, particularly in the winter, is the result of poor grading and an inadequate number of catch basins to collect the runoff.

The largest area of poor drainage/significant water ponding was observed on the east side of Lyseth and in the northern portions of the playfields and is called “Lake Lyseth” by the public. It is caused by a catch basin in the pavement on the northwest corner of the playground that is prone to frequent flooding and has nearly constant standing water above it in the late fall and early spring, severely restricting use of the playground and surrounding paved areas. Site reconnaissance by Oak Point Associates and communication with the City of Portland Public Services Department has revealed two likely causes for the water ponding in these areas. First, the catch basin beneath “Lake Lyseth” does not appear to have an outlet to drain the water that flows to it. Second, the drainage system that collects the runoff from the northeast side of the site as well as the Lyman Moore staff parking lot is evidently disabled. A portion of a pipe is believed to be crushed where it passes beneath the basketball and tennis courts on the east side of Lyman Moore, significantly restricting the capacity of the drainage system. Wood chips from the playground also routinely wash into the system, further restricting its capacity.

Public Input

At the charrette held on January 15, 2013, several priorities were expressed by the members of the public who attended. Oak Point also received input from the teachers and staff at Lyseth. The priorities communicated included the following:

- Site safety and physical/visual control of main entrance from office.
- Improve safety and efficiency of traffic flow (pedestrian and vehicular).
- Elimination of modular classrooms.
- Improve storm water drainage.
- Separate gym and cafeteria.
- Appropriate spaces for Special Ed in centralized location near the populations they serve.
- Locate grades together in a flexible, organized manner.
- Friendly and inviting environment.

Recommendations

Building Features

One of the priorities for improving Lyseth School is addressing capacity issues through the removal of the portable classroom building and the incorporation of those classroom spaces within the main building. Constructing a new, two-story addition and renovating the existing building would allow for this and provide additional needed program space. The proposed concept furnishes enough capacity for approximately 523 students, including the addition of a pre-kindergarten (pre-K) class.

The building entrance and adjacent space is proposed to be reconstructed and expanded. This would allow the main office suite to be moved to a location that would provide better monitoring of the main entrance. The current office suite is recommended for reconstruction and expansion, to create a library that would be sized to current standards and would be situated in a prominent location near the entrance. A new gymnasium is proposed that would include a performance stage. The existing multi-purpose room is recommended to be designated as a cafeteria and a new finishing kitchen would occupy the current kitchen and adjacent Special Education spaces.

A two-story addition would allow for expansion of the kindergarten wing to include a pre-kindergarten classroom. The first floor of the addition would also provide more space for ISP, OT/PT, speech, social workers and the school nurse. Classrooms for fourth and fifth graders, project rooms and a teachers' room would be located on the second floor. The addition would provide a connection between two existing classroom wings and create an enclosed courtyard.

Reconfiguration of existing rooms would create larger spaces for Music, Art, Reading and ELL as well as provide work rooms and a discovery lab. The new layout would also allow classrooms to be grouped together by grade.

Due to the reconfiguration of walls and the installation of new mechanical and sprinkler systems, it is recommended that new finishes be provided. The finishes include all new flooring, ceilings, paint, lighting and millwork.

Accessibility/Security/Life Safety

Accessible entrances should be provided both at the main entrance and the building entrance in the Lyseth staff parking lot. Additional accessible spaces with access aisles should be added to the staff parking lot. New sidewalks, with curb cuts where necessary, should be added along the edges of the staff parking lots and crosswalks are recommended to be added at the entrance/exit from the lots as well as in the parent and bus loops.

An elevator is recommended in the new addition to provide access to the second floor. New toilet rooms are proposed for students and staff in locations throughout the building. Toilet rooms are also recommended within classrooms for younger students and in the ISP rooms. Fixtures, accessories and clearances will need to meet accessibility requirements. An accessible toilet room should also be

provided in the new nurse's office and should be equipped with an ADA-compliant shower. Door hardware throughout the building is recommended to be upgraded with lever handles and doors reconfigured to meet required clearances. New signage that meets ADA requirements should be provided at rooms, stairs and exits.

Existing egress will need to be maintained throughout the building and two exits are provided from the second floor in the proposed plan for the new addition. In order to allow for the additional area of the building and to improve protection of the occupants and the structure, an automatic sprinkler system compliant with the current NFPA 13 code would need to be installed. A fire wall would also be needed to separate the building into areas within the allowable size limits. Relocation of the main office would improve monitoring of the main entrance by providing greater visibility. Reconstruction of the main entrance would create a controlled access point at the entry vestibule. A fire alarm system, emergency egress lighting, and exit signage should be provided to meet current NFPA code requirements.

Security systems should be upgraded to include access controls (card key system), CCTV cameras and intrusion detection coverage for the building. These systems are recommended to be integrated with district-wide systems for uniform monitoring and system administration.

Building Envelope

The existing exterior wall system is recommended to receive insulation to improve its thermal performance. The application of a rigid insulation and gypsum wall board finish system on the interior would appear to be the most appropriate approach in this situation.

New construction should incorporate thermal resistance values consistent with ASHRAE requirements into the design of the entire building envelope. A brick veneer, exterior wall system and aluminum windows and storefronts are proposed for the building additions. Airlock vestibules are recommended at each exit to reduce heat loss in these locations. A TPO membrane and rigid insulation roof system with skylights in strategic locations for introducing daylight into the building should also be included in the design of the new addition.

A green roof is proposed over the gymnasium and library additions. The vegetated layer would assist in storm water pollutant mitigation, contribute to building cooling on warmer days, extend the life of the roofing membrane and can be used to teach students about sustainability.

Mechanical/Plumbing Systems

The existing unit ventilators and air handler should be removed due to their age and poor condition and a high efficiency heating and ventilating system should be provided. The new heating system is recommended to consist of three high-efficiency, natural gas condensing boilers, which can operate at ultra high efficiencies when coupled with terminal devices, such as radiant panels, fan coil units or fin-tube radiation, which would be located in each space and which are designed to operate using low-temperature heating water (in the range of 90 deg F to 120 deg F). Boiler efficiencies exceeding 95

percent can be achieved with a system such as this. New heating water distribution piping should be installed and configured to accommodate the revised floor plans. The distribution piping should be well insulated to minimize stand-by losses associated with heating water distribution piping.

Energy Recovery Ventilators (ERVs) are proposed to provide ventilation to all the spaces in compliance with ASHRAE ventilation standards. The ERVs would pre-condition the incoming fresh outside air by extracting heat from the exhaust through the use of an air-to-air heat exchanger that prevents the outside and exhaust air streams from mixing. Fans located in the ERVs would distribute fresh air to each of the spaces and remove exhaust air through an above-ceiling ductwork system.

Air conditioning is recommended in selected spaces (offices, library, etc.) through the use of high-efficiency, environmentally friendly, refrigerant based systems, such as a variable flow refrigerant system or an air-to-air heat pump system. Outdoor condensing units should be located on the roof or at grade along the side of the building.

Additional sustainability features (in addition to the ERVs and high efficiency cooling systems) that are under consideration to be incorporated into the design are a solar domestic water heating system and a building energy management system. The solar heating system would consist of evacuated solar tube arrays located on the roof that would produce hot domestic water for use in the lavatories and sinks. Highly insulated tanks would be installed in the boiler room to store the heated water for use after the sun goes down. The energy management system would consist of a Direct Digital Control (DDC) system that would control all of the HVAC equipment in the building. Real-time energy usage would be monitored by the system and adjustments would automatically be made to the mechanical systems operations, without affecting occupant comfort, in order to maximize energy efficiency.

The existing plumbing fixtures are recommended to be salvaged and re-used since they are in good condition. A new high-efficiency domestic water heater would be provided and integrated with the solar water heating system described above.

Electrical/Communications Systems

Electrical service equipment will most likely need to be upgraded due to age and should be sized to meet future loads associated with building renovations and additional HVAC loads. Electrical equipment should be installed in dedicated electrical spaces. Electrical upgrades should include additional power for general classroom use and increased computer loads throughout the building.

Classroom lighting is recommended to be upgraded to include controls for daylight harvesting and to be enhanced for utilization of educational AV systems. Pendant-mounted direct/indirect, energy-efficient fluorescent fixtures are recommended to improve quality of light and flexibility for classroom AV systems.

Exterior lighting should include energy efficient LED and low glare type fixtures for parking and pedestrian areas. Lighting levels should be designed to meet current IESNA recommendations.

Building telecom design should include dedicated climate-controlled space for data/telephone systems and entrance facility. Classrooms are recommended to include wired and wireless network access, VoIP phone, intercom, interactive AV, and classroom sound enhancement systems.

Site Circulation and Parking

Lyseth-Moore Drive is proposed to be widened to allow space for visitor parking spaces to be added along the entrance road, near the end of Lyseth-Moore Drive and more wayfinding signs should be added to provide clear traffic flow directions. In front of Lyseth, the bus loop should be pulled away from the front of the school, allowing space for parents to wait for their children near the main entrance. The parent loop should be widened to allow for parking on both sides and maintaining adequate width for vehicles to exit the loop between the parked cars. It is also recommended that unused paved areas on the west and northeast side of the school be removed and replaced with turf.

It is recommended that the both the Lyseth and Lyman Moore staff parking lots be expanded and reconfigured to add more parking spaces, and the Lyseth staff parking lot should also be pulled away from the building. Additionally, the entrance and exit drives and staff/visitor parking lot should receive a pavement overlay and be re-stripped. The reconfiguration of the staff parking lots as well as the addition of parking spaces along the entrance drive as proposed would increase the total quantity of parking spaces on the campus to approximately 167.

At the eastern end of the Lyseth staff parking lot, a sloped section of pavement and a gate should be added to allow fire trucks to use the paved portion of the playground as a turn-around in the event of a fire.

Pending the recommendations of a subsurface investigation, all existing paved surfaces and sidewalks slated to remain are recommended to be reconstructed.

Outdoor Play and Learning Spaces

A general strategy of decreasing the amount of impervious surface at the perimeter of the building and infilling with natural play and learning space is proposed. The proposed building addition spans across the ends of two classroom wings, creating a completely enclosed courtyard space. This, if situated off a core space like the library, could be a location for an outdoor gathering space and/or garden space. The remaining outdoor courtyard, with its learning garden, could remain but the asphalt concrete is recommended to be replaced by lawn or plantings with added pathways for access as needed. Because of the drainage patterns on site, there is the opportunity to convert some of the asphalt concrete hard court at the east of the building to a rain garden space that could be used for both play and learning, and for stormwater treatment. Boardwalks are indicated to cut across the space to provide a variety of textures and heights.

In order to be able to provide a separate gym and cafeteria, the parking area to the south of the school needs to shift to the south, reducing the size of the multi-purpose (soccer/football) field on the site. The parking appears able to be reconfigured so that the field is still a regulation size soccer field. Because of the close proximity of the field to the parking lot, a low fence is proposed to provide a clear separation. Drainage and irrigation improvements to the fields are slated to be Capital Improvement (CIP) funded, however the timing of that work should be coordinated with the Lyseth School renovation project if possible.

Utilities

Electrical service to the building should be upgraded and a new exterior transformer provided. New underground communications service (telephone and cable) is also recommended. Also, at the request of Portland Public Schools (PPS), a pad and conduit has been scoped for a future generator (the exact size of the pad will need to be coordinated with the generator model that PPS anticipates using).

The existing water line from Lyman Moore should be abandoned and new water lines for potable water and fire protection run from the 8-inch water main on the northwest side of the site, near Junior Street.

The existing steam lines from Lyman Moore should be abandoned and new gas service run to the building from the existing gas line near the Lyman Moore bus drop-off.

The roof drain system, which would include roof drain lines from the building additions as well as the existing roof drain lines is recommended to be separated from the sanitary sewer system and connected to the existing storm drainage system on site.

Grading and Drainage

Catch basins are recommended to be added to the new parent and bus loops. They would be connected to the existing system beneath the staff/visitor parking lot.

The existing storm drain system that runs along the east side of Lyseth and through the playfields is recommended to be abandoned and a new system be provided. This new system would run along the east side of Lyseth, beneath the staff parking lots and connect to the existing system between Lyman Moore Middle School and the tennis and basketball courts. The existing catch basin on the northwest corner of the playground (in the location of "Lake Lyseth") should be removed and a new catch basin provided that is connected to the new system.

Stormwater treatment for new impervious surfaces is recommended on the site as required by both City and State requirements (current City of Portland requirements are more stringent than state requirements as they relate to triggers for stormwater treatment systems being required). These stormwater treatment systems include bioretention systems to collect runoff from the parent loop, bus loop and Lyseth staff parking lot and the use of porous pavement in the Lyman Moore staff parking lot.

Conversations with Stormwater Management representatives for the City have indicated that there is a high degree of likelihood that the City will be implementing a stormwater fee system for impervious surfaces on a site. Any stormwater treatment provided on the site will likely offset a portion of this fee.

Site Elements

The existing dumpsters could be relocated to the western side of the Lyseth staff parking lot. The dumpsters should be placed inside an enclosure to provide additional security and reduce their visual impact on the site.

An exterior storage shed (approximately 144ft²) is recommended to be provided on the northern side of the school that can be used to house exterior and gasoline-powered equipment, such as snow blowers and small lawn mowers.

DRAFT

Lyseth Elementary School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
									Pre-K	1		1000			1000	15	15
Kindergarten	2		805			1610	18	36	Kindergarten	1		1035			1035	18	18
Kindergarten	2		800			1600	18	36	Kindergarten	2		1000			2000	18	36
1st - 2nd Loop	1		790			790	20	20	Kindergarten	1		990			990	18	18
1st Grade	1		1145			1145	20	20	1st Grade	4		1000			4000	20	80
1st Grade	1		800			800	20	20	2nd-3rd Loop (2nd Grade)	2		805			1610	20	40
1st Grade	1		790			790	20	20	2nd-3rd Loop (2nd Grade)	2		800			1600	20	40
2nd Grade	1		800			800	20	20	2nd-3rd Loop (3rd Grade)	4		800			3200	23	92
2nd Grade	1		790			790	20	20	4th Grade	2		800			1600	23	46
2nd-3rd Loop	1		1160			1160	20	20	4th Grade	2		765			1530	23	46
2nd-3rd Loop	2		805			1610	20	40	5th Grade	2		800			1600	23	46
2nd-3rd Loop	1		800			800	20	20	5th Grade	2		765			1530	23	46
3rd Grade	2		800			1600	23	46									
4th Grade	4		800			3200	23	92	Project Room	1		800			800		
5th Grade	2		805			1610	23	46	Project Room	1		775			775		
5th Grade	2		800			1600	23	46									
Gifted & Talented	1		260			260			Gifted & Talented/ Discovery Lab	1		775			775		
Special Education	1		400			400											
Special Education Crisis Room	1		665			665											
K-5 Resource	1		800			800			Resource	2		800			1600		
ELL (portable)	1		590			590			ELL	1		800			800		
Literary Support (portable)	1		600			600											
OT/PT	1		805			805			OT/PT	1		645			645		
Speech	1		130			130			Speech	1		410			410		
Speech Office	1		55			55											
K-2 ISP	1		535			535			ISP	2		1060			2120		
3-5 ISP	1		805			805			Kitchen	1		440			440		
Reading	1		115			115			Read 180	1		805			805		

Lyseth Elementary School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
Art	1		800			800			Art	1		1100			1100		
Music	1		800			800			Music	1		1125			1125		
Library	1		1375			1375			Library	1		2450			2450		
AV Room	1		190			190											
Gym/Cafeteria	1		3400			3400			Gym	1		5710			5710		
PE Office	1		175			175			PE Office	1		150			150		
									PE Storage	1		315			315		
									Rec Storage	1		315			315		
									Stage	1		965			965		
									Cafeteria	1		3400			3400		
Kitchen	1		190			190			Kitchen	1		990			990		
Kitchen Line	1		460			460			Kitchen Storage	1		220			220		
Main Office	1		315			315			Main Office	1		500			500		
Principal	1		200			200			Principal	1		220			220		
Assistant Principal	1		160			160			Assistant Principal	1		125			125		
Conference	1		150			150			Conference	1		300			300		
Teachers' Room	1		290			290			Workroom	1		95			95		
Copier/Fax	1		40			40											
									Staff Break Room	1		775			775		
									Workroom	1		400			400		
									Workroom	1		390			390		
									Workroom	1		370			370		
Book Room	1		240			240			Book Room	1		250			250		
Social Worker	1		90			90			Social Worker/Psych	2		150			300		
Social Worker	1		160			160			Social/Psych Conference Room	1		260			260		
Nurse	1		250			250			Nurse	1		600			600		
Credit Union	1		140			140			Credit Union	1		140			140		

Lyseth Elementary School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
CAPACITY		502						CAPACITY		523							
TOTAL NET AREA (SF) *		35090						TOTAL NET AREA (SF)		52330							
Structure/Circulation/Mech/Utility		16635						Structure/Circulation/Mech/Utility		24439							
TOTAL GROSS AREA (SF) *		51725						TOTAL GROSS AREA (SF)		76769							
GROSS SF PER STUDENT		103						GROSS SF PER STUDENT		147							

* Total area includes portable classrooms

Buildings for Our Future
Portland Public Schools
Elementary Schools, Grades PreK-5

Oak Point Associates

**Harrison Lyseth Elementary School
Project Budget**

Implementation of the "facility equity model" with energy and sustainability upgrades, outdoor curriculum enhancements and building and site improvements.

A NEW CONSTRUCTION

Renovation/Reconfiguration	\$ 3,606,210
New Construction/Addition	\$ 6,556,436
Demolition	\$ 51,500
Built in Equipment	\$ 546,000
Site Development	\$ 1,997,640
Subtotal	\$12,757,786

B ADMINISTRATIVE COST & RESERVE

Temporary Classrooms	\$ -
Advertising/Insurance/legal	\$ 55,000
Bid Contingency 5%	\$ 637,889
Construction Contingency 5%	\$ 637,889
Subtotal	\$ 1,330,778

C FEES AND SERVICES

Architect/Engineer	\$ 983,200
A/E Reimbursable	\$ 39,400
Commissioning	\$ 71,364
Environmental Permitting	\$ 27,532
Life Cycle Cost Analysis	\$ 10,000
Surveys/Soils/Testing	\$ 45,500
Clerk of the Works	\$ 73,500
Subtotal	\$ 1,250,496

D TOTAL PROJECT COST

\$15,339,060

PROJECT TIMELINE - RECOMMENDATION

HARRISON LYSETH ELEMENTARY SCHOOL

		Local Funding	
2013	July	Site Studies	
	August		
	September	Select Architect	
	October		
	November	Referendum	
	December	Concept Design	
2014	January		
	February		
	March		
	April		Design Development
	May		
	June		
	July		Bid Documents
	August		
	September		
	October		
	November		Bid
	December		
2015	January	Contract	
	February		
	March	Material Approval & Delivery	
	April		
	May		
	June	Construction (Renovation)	
	July		
	August	Construction (Addition)	
	September		
	October		
	November		
	December		
2016	January		
	February		
	March		
	April		
	May		
	June		Construction (Renovation)
	July		
	August	Occupancy	
	September		
	October		
	November		
	December		

Presumpscot Elementary School

Year Opened:	1962
Number of Stories:	One
Building Area:	25,394 gsf (Main Building)
.....	4,308 gsf (Three Portable Classrooms, 1,436 ft ² each)
2012/2013 Student Enrollment:	275
Capacity:	315 (Based on 2012/2013 grade configurations and district class size maximums)
2012/2013 Full-Time-Equivalent	
Staff Members:	42
Site Area:	+/- 7.0 Acres
Approximate Lot Coverage:	9.7%
Zone:	R-5 (Residential)
Setbacks:	20 feet (Front and Rear Yard)
.....	14 feet (Side Yard for 2-1/2 Story Structures)
.....	5 feet (for accessory detached structures less than 144 ft ²)
Additional Site Constraints:	25 foot setback from cemetery on east side of site
Total Available On-Site Parking Spaces:	+/- 50 (including two accessible spaces)

A summary table identifying current and proposed program spaces at Presumpscot Elementary School is contained at the end of this section of the report, along with a budget summary and timeline. Existing and proposed site plans, floor plans and massing plans can be found in Appendix B.

Existing Conditions

Building Features

Presumpscot Elementary School is located near the intersection of Presumpscot Street and Sherwood Street. The school consists of the main building and three detached, portable buildings at the rear of the main building, each housing two classrooms. The portables were installed in 2006, and are referred to in the school community as “the cottages.” A raised wood deck/ramp was installed in 2012 that connects the cottages and doubles as an outdoor classroom.

For many years, the school has been operating at an enrollment that requires the portable classroom units to accommodate the student population. In addition to these chronic capacity issues, the building lacks appropriately sized classrooms and Special Education (SpEd) spaces. Many of the rooms support multiple programs. Set-up time, scheduling and disruptions/distractions compromise these educational programs.

The main entry has an access-controlled airlock/vestibule, providing a secure entrance into the building. The administrative area consists of the main office (with a window into the main entry vestibule), a conference room that doubles as a work room and an office for the principal (which can only be accessed through the conference room). This configuration is very disruptive and creates privacy issues.

The main office (at 100 SF) is grossly undersized and does not allow for anything but a desk and one staff member.

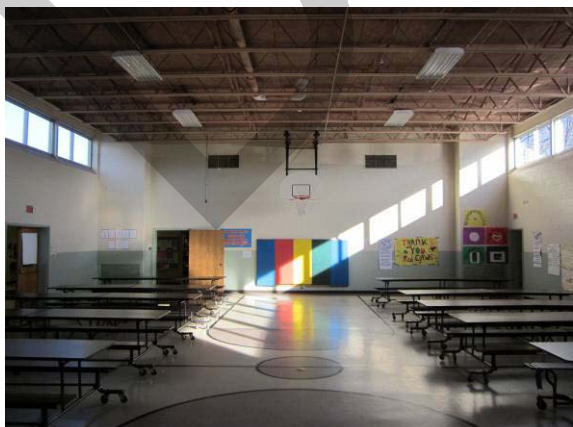


Main entrance vestibule



Conference/work room with principal's office beyond

Directly across from the main entry is a multi-purpose room used as a gym, cafeteria and for hosting student assemblies. A small warming kitchen is adjacent to the south. A portable stage is set up in the multi-purpose room for performances and is collapsed and stored in a narrow chase between the boys' and girls' toilet rooms when not in use.



Multi-purpose room



Library

To the north of the main entry is an academic wing (double-loaded corridor configuration) housing the library (formally a classroom, and undersized at 865 SF), an OT/PT room that doubles as a bookroom, a storage/data room, one kindergarten classroom (without a toilet room), one second grade classroom and three third grade classrooms.

To the south of the entry is speech, a nurse's office with a non-compliant toilet room, a non-compliant staff toilet (the only one in the building) and a teachers' lounge.

To the east of the main entry is a corridor housing SpEd, an entry into the multi-purpose room, recently updated girls' and boys' toilet rooms (shared by the entire school population) and a shared classroom for Music and Art with a kiln open to the classroom. At the end of this corridor is a single set of exterior doors that lead to the portable classrooms.



Art/Music classroom

To the south of this corridor is another academic wing housing two kindergarten classrooms (without toilet rooms), two first grade classrooms, two fifth grade classrooms, entry into the multi-purpose room, custodial closet, a shared social worker office, and a shared literacy and data coach office that can only be accessed through one of the fifth grade classrooms.



Portable classrooms

Outside of the Art/Music hallway is a grouping of three portables with an outdoor ramp/deck structure used as an outdoor classroom. Two portables house two second grade classrooms and two fourth grade classrooms and the third portable houses the "Read 180" program on one side and a shared SpEd classroom with a room divider on the other. None of the portables have plumbing and the ramp system is not ADA compliant.



Outdoor classroom deck between portable classrooms



SpEd space in portable classrooms

There are four egress doors (lacking airlocks), one at the end of each hallway. The boiler room (accessible only from the outside of the building) is located to the south of the warming kitchen. This space also doubles as storage space.



Main entrance



North side of building exit

Accessibility and Life Safety

There are two standard width parking spaces on site that are marked as accessible; however only one has an adjacent (van accessible) access aisle. Current *ADA Standards for Accessible Design* require a minimum of two accessible spaces, including one van accessible space. Compliant spaces must be adjacent to an appropriately sized access aisle.

Most of the entrances and exits to the school are either at grade or have small ramps to provide handicap accessibility which appear to be code-compliant. However the exits on the north side near the playground and the southeast corner of the school have steps. The ramp at the portable classroom units is non-ADA compliant as it lacks handrails and has a lip at the bottom.

On the interior of the building, there are two single-stall toilet rooms. One is for staff and the other is located in the nurse's office. Neither of these is ADA compliant. There should be separate male and female bathrooms for staff. Toilets and sinks in the group boys' and girls' bathrooms were recently replaced and the fixtures are ADA compliant. The quantity of toilet fixtures appears sufficient to meet the needs of the student population, but not the gym/cafeteria space (especially if they are utilized concurrently). The door hardware in the building is knob style and does not meet ADA grip requirements. Also, many of the doors do not meet clearance requirements. Most rooms do not have signage, and if they do, it does not meet ADA requirements for tactile font, Braille and location.

Based on the non-combustible construction of the building and the frontage around the building perimeter, the size of the school appears to be marginally within the IBC allowable building area. The original construction documents indicate that fire walls were constructed to divide the building into smaller fire areas. The overhead fire doors at these fire walls are no longer operable and are left in the open position. Under current building codes, these fire doors would create dead end corridors that exceed the allowable length when closed. Though the existing size of the building appears to be acceptable, additional fire protection measures will need to be designed into any plans for an addition. There is currently no automatic fire protection sprinkler system within the building, although there is a fire alarm system.

The fire alarm system control panel is located in the main entrance airlock/vestibule. The system is a zoned-type panel with pull stations and horn/strobe units throughout the building. Pull stations are located at building egress points but do not meet ADA mounting height requirements. Horn/strobe units are a mix of older non-ADA type and newer devices that appear to meet ADA requirements. Additional notification devices are required in classroom and bathroom areas.



Girls' toilet room



Room signage

Life safety egress requirements are achieved by the building layout with adequate means of egress from all spaces, paths to exit access corridors and exits at the end of each of four corridors and at the main building entrance.

Emergency egress lighting is provided by battery-type units with remote incandescent heads. Additional light units should be installed to cover all interior egress paths and exterior egress points. Exit signage is located at egress doors; however, additional illuminated signs are required in a few locations.

Building Envelope

The existing building envelope is constructed of a concrete masonry unit (CMU) with brick veneer system. The walls are generally in good condition and provide a durable finish on both the exterior and interior. No insulation was installed between the brick and CMU when the walls were constructed and therefore these walls have insufficient thermal value. The original windows and exterior doors were recently replaced. The insulated glass windows are aluminum and have a single operable sash below and fixed glazing above. Exterior doors and frames are also aluminum with insulated panels and glazing. The roof was upgraded around 1993 with an EPDM membrane system. No documentation has been found to confirm the amount of rigid insulation that was installed. The twenty-year-old roof is near the end of its maintainable life.



Building exterior

Mechanical/Plumbing Systems

The school is currently equipped with a new (2012) steam boiler that distributes steam to unit ventilators located throughout the building, by way of steam piping in a trench below the perimeter of the building. The boiler, located in the boiler room, is a dual fuel (natural gas and #2 heating oil) Hurst steam boiler and is in good condition. The boiler has a capacity of approximately 2,500 MBH.



Hurst steam boiler

An electric steam condensate pumping station is also located in the boiler room. It appears to be in good condition and in proper working order with no visible leaking.



Electric steam condensate pumping station

The steam distribution piping appears to be in fair condition and is original to the building. Space temperature control is achieved through individual thermostats located in each of the zones throughout the building.

There is a unit ventilator located along the perimeter wall in each classroom. These units are in fair condition and are operable. However, they are very inefficient, most likely provide sub-standard ventilation, and are beyond the end of their expected useful life.



Unit ventilator

Other spaces in the building are heated with fin tube radiation, which is also at the end of its expected useful life. The gymnasium is equipped with an air handling unit that provides ventilation and heat. It is also at the end of its expected useful life.

Presumpscot was recently retrofitted with low-flow plumbing fixtures throughout the building, which are in good condition. An electric water heater provides domestic hot water for the lavatories and sinks throughout the building. The heater is in fair condition.



Fin tube radiation



Electric water heater

Electrical/Security/Communications Systems

The existing building electrical system is fed underground to a pad mounted transformer located at the receiving area in front of the building. The transformer pad appears to be for a smaller unit than the existing transformer. The electrical service is rated for 600 amps at 120/208V, 3-phase. Information provided from CMP indicates an approximate peak demand of 170 amps (60 kVA) on the service. The existing main switchgear is located in the custodial office/storage space and is not provided with the National Electric Code required working space. The service entrance and branch panels appear to be in fair condition. Branch panels are distributed in each corridor, recessed in walls and generally remain unlocked. The panelboard feeding portable classrooms is surface mounted on the wall near the back egress door. Conduit for power to the portable units is surface mounted on the exterior of the building and enclosed in plywood for protection.

Lighting in classrooms is recessed fluorescent, lensed-type fixtures with energy efficient lamps and ballasts. Occupancy sensors are utilized for energy savings in classrooms to turn off lights when the space is not occupied.

Exterior perimeter lighting is provided by LED-type flood lights that have been installed in the last two years. The existing flood lighting does not provide sufficient illumination to meet IESNA recommendations for parking and pedestrian areas during night events at the school.

The facility is protected with an intrusion detection (security) system consisting of a keypad in the main entrance vestibule and motion sensors throughout the building.

Communications systems include intercom, telephone and Wi-Fi in each classroom. The communications service entrance shares space with the main electrical service room and custodial office/storage spaces.

Site Circulation and Parking

Access to the site is primarily from the entrance/exit loop in front of the school, along Presumpscot Street. Once on site, the loop splits into a dedicated bus drop-off loop (located immediately adjacent to the school) and the access aisle for a staff/visitor parking lot. There is an additional one-way access drive (exit only) that runs along the south side of the school and exits onto Sherwood Street which is used primarily to access the majority of staff parking and for deliveries. A receiving area is located on the west side of the building, just south of the main entrance.

There are sidewalks along Presumpscot Street and Sherwood Street near the site, with curb cuts where they cross the entrance drives to the school. There are curb cuts where the sidewalk crosses the end of the secondary exit as well as a marked crosswalk, providing safe crossing for pedestrians.

Parking is divided among four parking areas: a staff/visitor parking area on the west side of the school (approximately 14 spaces), two staff parking areas along the south side of this access road (approximately 23 spaces, including two accessible spaces), and a staff parking area at the rear of the school, adjacent to the playground (approximately 13 spaces). There appears to be adequate parking for the school's 42 full-time-equivalent staff members.

The pavement and sidewalks on site are asphalt concrete, and the curbing is mostly asphalt concrete with precast concrete in limited quantity in the landscaped area separating the bus loop from the staff/visitor parking lot. The majority of the parking areas, driveways and sidewalks on the site are rutted and alligatored and in need of replacement.



Pavement and sidewalk

Oak Point Associates' personnel were present to observe traffic flow at the beginning and end of the school day in December, 2012 and January, 2013. It was observed that student drop-off and pick-up occurs in front of the school. There are two school buses in both the morning and the afternoon (in the afternoon there is one bus that makes two trips). These school buses utilize the dedicated bus drop-off loop, which is blocked off with cones to prevent other traffic from interfering with the school busses at the beginning and end of the school day.

It appears that the original design intent of the layout was to utilize the access aisle for the staff/visitor parking lot as both the site exit for all vehicles except buses and the parent loop. A landscaped island separates bus traffic from the vehicular traffic, but there is no sidewalk along the island.

Because of its location relative to the main entrance and the lack of a sidewalk, the designated parent loop remains largely unused during morning drop-off. Instead, children are typically dropped off on the sidewalk adjacent to the site entrance, where there is a safe place to walk and direct line-of-sight between the driver and the main entrance to the school. These stopped cars in the site entrance drive cause traffic to back up onto Presumpscot Street (some parents end up parking on the side of Presumpscot Street, where parking is allowed, and walking their child into the school instead of waiting in the traffic).

During afternoon pick-up, cars generally pull farther into the site and park in the parent loop along the landscaped island. This slightly reduces the amount of traffic backing up onto Presumpscot Street. However, there is still insufficient queuing space, and due to the width of the drive aisle, cars park in the staff/visitor parking lot and have difficulty pulling out of the parking spaces with cars parked along the landscaped island. These parked cars in the parent loop also create a bottleneck for exiting traffic, which has to drive between the parked cars in the loop and the parked cars parked in the parking spaces in the parking lot. In the winter months, this is exacerbated as snow banks further reduce the width of the travel lane/parent loop. To avoid the congestion, many parents park along the entrance drive and the east side of Presumpscot Street and walk onto the site to pick-up their children.

To help alleviate the issues with traffic backing up onto Presumpscot Street and to reduce the number of cars parked off site, cones blocking traffic from entering the bus loop are removed once the buses have departed the site. Staff then redirects traffic to exit the site through the bus loop instead of the

staff/visitor parking lot and parents are allowed to pick up their children in the bus loop. Traffic is prohibited from using the secondary exit onto Sherwood Street during both pick-up and drop-off.

Outdoor Play and Learning Spaces

Outdoor play spaces are located to the north and east of the school building and consist of a play field, an extensive hard court area, and commercial playground equipment.

The multi-purpose play field is approximately 1.5 acres in size, with a chain link backstop in fair condition at the corner of the field closest to the existing portable classrooms.



Playfield and backstop

It is used during recess and for physical education classes. According to the City, the field is also used during the spring, summer and fall seasons by various community teams and leagues like Little League, PAYSA Soccer and Back Bay Lacrosse. The public reported the field to be too small for organized sports, to have drainage issues and to be seasonally muddy.



Hard court and playground

The hard court area is an extension of the staff parking lot at the rear of the school, wrapping around the school building between the building and the portable classroom units and continuing around the north side of the school building. In total, it provides approximately 15,000 square feet of play surface. The area between the staff parking and the portables has three basketball hoops (one is striped with a free throw lane). A few hopscotch games and a large compass rose are striped on the pavement in this area. There is a fourth basketball hoop to the north of the portable classroom units. Four square and hopscotch

games are striped on the pavement at the north side of the school building. The pavement is in fair condition.

The commercial playground equipment consists of a large, brightly colored composite play structure; a 3-bay arch swing; several imaginative play panels; a balance beam; a ball drop; and a freestanding, overhead track ride component. All commercial equipment appears to be fairly new and in good condition. The playground surfacing is wood chip, with a retaining curb on the back side. There are several benches installed at the perimeter of the equipment and a loop-style bicycle rack.

Between the play fields, the hard courts and the playground equipment, the school grounds offer many opportunities for active play throughout the year. There are two outdoor spaces adjacent to the playground that provide a more contemplative, passive play opportunity: one is a small outdoor “learning garden” to the front of the school; the other is a forested area with a wood pergola at the rear of the playground.

The site is adjacent to the Portland Trails network, and a public use trail runs along the north side of the playground equipment area and into the woods behind the school. This provides a great amenity for both outdoor recreation and learning for the school.

Other outdoor learning spaces include an outdoor classroom between the portables (installed in 2012), a wood pergola seating area adjacent to the playground, a “learning garden” at the front of the school near the bus loop, and several raised planters/classroom gardens located at the learning garden as well as near the pergola and between the school and staff parking lot. There is a small maintenance and composting area in the woods near the pergola.



Wood pergola and raised planters



Boulder garden

There is also a boulder garden to the right of the main entrance to the school, which was designed by a Presumpscot student and funded by a Painting for a Purpose grant in 2012. It consists of a +/- 24-foot diameter ring of granite benches and boulders within a mulch bed. At the center of the ring is a small commemorative monument with a cobblestone-edged garden. The garden has been very popular since its installation and is used for outdoor lunch as well as informal student gathering.

Site Utilities

Electrical and communications (telephone and cable) service runs overhead from Presumpscot Street along the southern side of the site to a utility pole on the southern side of the site near Corliss Road. From there, electrical service is run underground to a transformer located near the service area. Communications service is run both underground and overhead from the same utility pole to the service area.

Natural gas service is run to the building's mechanical room via an underground line from Corliss Road. There is also an underground oil tank located adjacent to the loading area that serves as a back up to the natural gas service.

Potable water service is provided via a 2-1/4 inch water line run to the mechanical room from an 8" water line in Presumpscot Street. There is no fire protection service line.

A 10-inch diameter combined sanitary sewer/roof drain line exits the building via a crawlspace beneath the loading area and runs to a sewer manhole approximately 45 feet from the building. From there it flows into the sewer main in Presumpscot Street.

Grading and Drainage

The school is situated at the highest point on the site (approximately 8 to 9 feet above the grade at Presumpscot Street and Sherwood Street). The grade generally slopes away from the building in all directions. Along the rear of the site, on the east side, there is a steep grade drop (approximately 12 feet) to the adjacent properties.

The majority of the site is well-drained, with runoff from the bus loop and staff/visitor parking area flowing into a closed drainage that discharges into the closed storm drainage system in Presumpscot Street. Runoff from the staff parking area on the south side of the building drains into a catch basin in the southwest corner of the parking area. No drainage problems were observed in this area, but no outlet was observed from this catch basin.

Drainage problems were noted by the staff and public in the playfield on the east side of the site, which is generally flat and poorly drained.

Public Input

At the charrette held on January 31, 2013, several priorities were expressed by the members of the public who attended. Oak Point also received input from the teachers and staff at Presumpscot. The priorities communicated included the following:

- Creating a friendly and inviting environment
- Improving visual control of the main building entrance from the main office
- Eliminating portable classrooms
- Providing separate gym and cafeteria spaces
- Incorporating centralized space for Special Education, near the populations it serves
- Increasing the amount of storage space
- Locating grades together, in a flexible, organized manner
- Providing additional support spaces for staff (i.e. toilet rooms, work rooms)
- Improving the safety and efficiency of traffic flow (pedestrian and vehicular)

Recommendations

Building Features

One of the priorities for improving Presumpscot School is addressing capacity issues through the removal of portable classroom buildings and the incorporation of those (four grade-level plus two SpEd) classroom spaces within the main building by constructing a new, two-story, addition and renovating the existing building. Unlike some of the other elementary school sites, Presumpscot has sufficient area to the rear of the school for a building addition that could not only incorporate enough space for the current capacity, but also for a relatively small additional investment, could increase the capacity of the school beyond the projected enrollment to help address district-wide capacity issues (see *School Capacity* chapter). The proposed concept, therefore, furnishes enough capacity for approximately 396 students, including the addition of a pre-kindergarten (pre-K) class. A pre-K, first, fourth and fifth grade classroom are proposed to be added to support the increased capacity.

Core spaces (separate gym, library, and cafeteria) would also be furnished at a size that supports the increased capacity. The gymnasium is recommended to be a middle-school-sized basketball court with bleacher seating for half of the student enrollment. A performance stage, office and storage rooms for the school and recreational department are also recommended. Additional staff and student toilet rooms, SpEd rooms and administrative spaces would need to be added to support the educational program. Music and Art are proposed to have their own classrooms with proper storage rooms and a separate room for the kiln. A new main entrance would be created in roughly the same location as the existing entrance, but oriented to improve sight distance and legibility.

Interior finish upgrades are recommended to include all new flooring, ceilings, paint, lighting and millwork. Due to the reconfiguration of walls and the installation of new mechanical and sprinkler systems, it is recommended that new finishes be provided. The finishes include all new flooring, ceilings, paint, lighting and millwork.

Accessibility and Life Safety

The main entrance and the exits from the building to the play areas would be at-grade. Additional curb cuts are recommended to be added to provide easier access between the parking lots and other areas on the site and also to meet the request of the Portland Public School Transportation Services Department to reduce the stress on the mechanical lifts installed on the school busses. Also, the existing accessible parking spaces should be reconfigured to be code compliant and an additional accessible space should be added.

Additional pedestrian access to the site would be provided via a trail from the end of Corliss Road. Also, the City of Portland in partnership with the Maine Department of Transportation, will be constructing a “Safe Routes to School” project in the summer/fall of 2013 that will enhance two existing pedestrian crossings on Presumpscot Street. Both crossing locations will have ADA-compliant curb ramps installed, pedestrian refuge islands constructed, and add pedestrian-activated flashers.

An elevator is recommended in the new addition to provide access to the second floor. New toilet rooms are proposed for students and staff. Fixtures, accessories and clearances will need to meet accessibility requirements. An accessible toilet room should also be provided in the new nurse's office and should be equipped with an ADA-compliant shower. Door hardware throughout the building is recommended to be upgraded with lever handles and doors reconfigured to meet required clearances. New signage that meets ADA requirements should be provided at rooms, stairs and exits.

Existing egress will need to be maintained throughout the building and three exits are provided from the second floor in the proposed plan for the new addition. In order to allow for the additional area of the building and to improve protection of the occupants and the structure, an automatic sprinkler system compliant with the current NFPA 13 code will need to be installed. Construction of a new building entrance will improve monitoring of the main entrance by providing greater visibility at the main office and creating a controlled access point at the entry vestibule.

A fire alarm system, emergency egress lighting, and exit signage should be provided to meet current NFPA code requirements.

Building Envelope

The existing exterior wall system is recommended to receive insulation to improve its thermal performance. The application of a rigid insulation and gypsum wall board finish system on the interior would appear to be the most appropriate approach in this situation.

Roof replacement is scheduled for 2017 under the Capital Improvements Plan and is not included in budget for these proposed renovations. Incorporating the roof replacement into the renovation and addition project should be considered since the timing of the two projects nearly coincide and modifications to the existing roof will be required to address snow drift loads and flashing at the additions.

New construction should incorporate thermal resistance values consistent with ASHRAE requirements into the design of the entire building envelope. A brick veneer, exterior wall system and aluminum windows and storefronts are proposed for the building additions. Airlock vestibules are recommended at each exit to reduce heat loss in these locations. A TPO membrane and rigid insulation roof system with skylights in strategic locations for introducing daylight into the building should also be included in the design of the new addition.

Mechanical/Plumbing Systems

The existing unit ventilators and air handler should be removed due to their age, and high efficiency heating and ventilating systems should be provided. Heating in the spaces is recommended to be accomplished through the use of fin tube radiation or radiant heating panels in each of the spaces. The existing boiler is currently producing steam for distribution through the original piping system. The

boiler is new and can remain in service to serve the new terminal equipment. The distribution piping would need to be reconfigured to accommodate the new floor plans.

Energy Recovery Ventilators (ERVs) are recommended to provide ventilation to all spaces in compliance with ASHRAE ventilation standards. ERVs pre-condition the incoming fresh outside air by extracting heat from the exhaust through the use of an air-to-air heat exchanger that prevents the outside and exhaust air streams from mixing. Fans located in the ERVs would distribute fresh air to each of the spaces and remove exhaust air through a new, above-ceiling ductwork system.

Air conditioning will be provided in selected spaces (offices, library, etc.) through the use of high-efficiency, environmentally friendly, refrigerant-based systems, such as a variable flow refrigerant system and/or air-to-air heat pump. Outdoor condensing units will be located on the roof or at grade along the side of the building.

Additional sustainability features (in addition to the ERVs and high efficiency cooling systems) that are under consideration to be incorporated into the design include a solar domestic water heating system and a building energy management system. The solar heating system would consist of evacuated solar tube arrays located on the roof that would produce hot domestic water for use in the lavatories and sinks. Highly insulated tanks would be installed in the boiler room to store the heated water for use after the sun goes down. The energy management system would consist of a Direct Digital Control (DDC) system that would control all of the HVAC equipment in the building. Real-time energy usage would be monitored by the system and adjustments would automatically be made to the mechanical systems operations, without affecting occupant comfort, in order to maximize energy efficiency.

The existing plumbing fixtures should be salvaged and re-used since they are in good condition. A new high-efficiency domestic water heater is recommended, which should be integrated with the solar water heating system described above.

Electrical/Security/Communications Systems

Electrical service equipment will most likely need to be upgraded and sized to meet future loads associated with building renovations and additional HVAC loads. Electrical equipment should be installed in dedicated electrical spaces. Electrical upgrades should include additional power for general classroom use and increased computer loads throughout the building.

Classroom lighting is recommended to be upgraded to include controls for daylight harvesting and to be enhanced for utilization of educational AV systems. Pendant-mounted direct/indirect, energy-efficient fluorescent fixtures are recommended to improve quality of light and flexibility for classroom AV systems.

Exterior lighting should include energy efficient LED and low glare type fixtures for parking and pedestrian areas. Lighting levels should be designed to meet current IESNA recommendations.

Security systems should be upgraded to include access controls (card key system), CCTV cameras and intrusion detection coverage for the building. These systems are recommended to be integrated with district-wide systems for uniform monitoring and system administration.

Building telecom design should include climate-controlled space for data/telephone systems and entrance facility. Classrooms are recommended to include both wired and wireless network access, VoIP phone, intercom, interactive AV, and sound enhancement systems.

Site Circulation and Parking

To further separate vehicular traffic from bus traffic, the flow direction of the access drive on the south side of the school is recommended to be reversed, allowing traffic to enter the site from Sherwood Street while still providing access to the staff parking areas. With the flow direction reversed, the road can be used as the primary parent pick-up and drop-off lane and children being picked up by their parents can be dismissed from the entrance on the southern side of the building instead of the main entrance. The length of the road would allow significantly more on-site queuing space than the existing pick-up/drop-off lane. A pull-off has also been added with a direct line-of-sight to the new main entrance to reduce the potential for bottlenecks due to parked cars. Vehicles would still exit the site via the access aisle for the staff/visitor parking lot, but it would no longer be used for pick-up or drop-off. Bus pick-up and drop-off would remain unchanged.

The public expressed concerns about the increased traffic on Sherwood Street between the entrance to the school and Presumpscot Street if the Sherwood Street access to the site is used for parent pick-up and drop-off, as the road can be subject to local traffic using Sherwood Street as a cut-through between Presumpscot Street and Veranda Street. Additionally the road is narrow (approximately 24 feet wide), and on-street parking is permitted on both sides, which could potentially restrict the two-way travelled way to approximately 10 to 12 feet wide (although no vehicles were observed parked on either side of the street between the access drive and Presumpscot Street). To alleviate these concerns, it is recommended that on-street parking be eliminated between the access road and Presumpscot Street. Conversations with Parking and Transportation representatives from the city indicated that this would be an acceptable solution. However in order to fully address these concerns, it is suggested that a traffic study be conducted to fully evaluate the overall implications of the increased traffic on Sherwood Street. Pending the recommendations of a subsurface investigation, all existing paved surfaces and sidewalks slated to remain are recommended to be reconstructed.

Changes have been proposed to the parking area on the southeast corner of the building to remove unused paved areas and provide better separation of the parking lot from adjacent play areas. Also, small changes have been proposed to the lot on the south side of the building. These changes would increase the total number of parking spaces on the site from 50 to 53 (including three accessible spaces).

Outdoor Play and Learning Spaces

The recommendations for outdoor play and learning spaces are primarily a reaction to the proposed school expansion and increased population. An expansion of the school building into existing playground space will reduce the amount of play area, while the school population is projected to increase. The playground area will need to expand in order to be able to provide sufficient space for student recreation and learning. The challenge is that the site is already almost fully developed and programmed, so the strategy is to utilize existing developed space more effectively rather than to expand the development footprint.

The footprint of the proposed expansion bisects the existing hard court and impacts the wooded area where the wood pergola and some classroom gardens are located. It also slightly reduces the play field in size. The portable classrooms are to be removed, but the school wishes to reuse the outdoor classroom deck.

The expansion of the building footprint is unlikely to leave enough room around the back of the building to provide a single playground space. More likely, the playground will have to be divided into two separately staffed zones, one associated with the existing play field and the other anchored by the existing playground equipment. Both areas should have hard court space to be used during winter months, and both areas should have access to areas designated for natural play (wooded areas and/or constructed garden areas). The Portland Trails network may provide the opportunity for a created connection between the playground areas.

The playfield is recommended to be refurbished and underdrains provided to correct the existing drainage problems reported.

Site Utilities

Electrical and communications utilities should be upgraded as required and a new transformer provided. Also, at the request of the School Department, a pad and conduit has been scoped for a future generator (the exact size of the pad will need to be coordinated with the generator model selected).

Fire protection service is recommended to be provided via a new connection to the water main in Presumpscot Street. It is also recommended that the existing potable water service line be upgraded as necessary.

The existing gas service to the building appears sufficient to accommodate both the existing building and the proposed addition.

The existing sanitary sewer line exiting the building appears sufficient to accommodate both the existing building and the proposed addition.

To comply with federal regulations, the City is in the midst of a project to separate the storm drainage and sanitary sewer flows. Because of this, all new roof drain and foundation drain lines from the building additions cannot be piped directly into the combined lines. It is also recommended that the existing roof drain lines be separated from the sanitary sewer system. Both the existing and new roof/foundation drain lines are recommended to be connected to the existing storm drain line in Presumpscot Street.

Grading and Drainage

New storm drainage infrastructure on the north, south and west side of the building is recommended to connect to the existing storm drain line in Presumpscot Street. Storm drainage on the east side of the building is proposed to outlet on the east side of the site.

Stormwater treatment for new impervious surfaces should be provided on the site as required by both City and State requirements (current City of Portland requirements are more stringent than state requirements as they relate to triggers for stormwater treatment systems being required). These stormwater treatment systems could include Low Impact Development measures, such as a vegetated roof on a portion of the building addition and bioretention areas to collect runoff from the parking area and hard court on the east side of the building. Conversations with Stormwater Management representatives from the City of Portland have indicated that there is a high degree of likelihood that the City will be implementing a stormwater fee system for impervious surfaces on a site. Any stormwater treatment provided on the site will likely offset a portion of this fee.

Site Elements

The existing dumpsters have been relocated to the staff parking area on southern side of the site, near the accessible parking spaces. The dumpsters should be placed inside an enclosure to provide additional security and reduce their visual impact on the site.

The existing concrete vault located between the two parking areas on the south side of the site is recommended to be replaced with a larger storage shed (approximately 144ft²) that could be used to house exterior and gasoline-powered equipment, such as snow blowers and small lawn mowers.

Presumpscot Elementary School

EXISTING FACILITY								PROPOSED FACILITY									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
Gym/Cafeteria	1		2650			2650			Gym	1		5415			5415		
									Cafeteria	1		2355			2355		
PE Office	1		185			185			PE Office	1		130			130		
									PE Storage	1		165			165		
Kitchen	1		265			265			Kitchen	1		1245			1245		
									Stage	1		960			960		
									Rec Storage	1		200			200		
Main Office	1		100			100			Main Office	1		515			515		
Principal	1		180			180			Principal	1		210			210		
									Assistant Principal	1		150			150		
Conference	1		365			365			Conference	1		365			365		
									Work Room	1		240			240		
Teachers' Room	1		250			250			Work Room	1		470			470		
									Work Room	1		310			310		
Social Worker	1		105			105			Social Worker	1		370			370		
									Social Worker	1		165			165		
									Social Worker Entry	1		130			130		
Nurse	1		250			250			Nurse	1		670			670		
CAPACITY *						315			CAPACITY						396		
TOTAL NET AREA (SF) *						20940			TOTAL NET AREA (SF)						39895		
Structure/Circulation/Mech/Utility						8762			Structure/Circulation/Mech/Utility						20464		
TOTAL GROSS AREA (SF) *						29702			TOTAL GROSS AREA (SF)						60359		
GROSS SF PER STUDENT						94			GROSS SF PER STUDENT						152		

* Capacity and total area include portable classrooms

Buildings for Our Future
Portland Public Schools
Elementary Schools, Grades PreK-5

Oak Point Associates

**Presumpscot Elementary School
Project Budget**

Implementation of the "facility equity model" with energy and sustainability upgrades, outdoor curriculum enhancements and building and site improvements.

A NEW CONSTRUCTION

Renovation/Reconfiguration	\$ 2,270,177
New Construction/Addition	\$ 6,359,460
Demolition	\$ -
Built in Equipment	\$ 484,000
Site Development	\$ 1,118,640
Subtotal	\$10,232,277

B ADMINISTRATIVE COST & RESERVE

Temporary Classrooms	\$ -
Advertising/Insurance/legal	\$ 55,000
Bid Contingency 5%	\$ 511,614
Construction Contingency 5%	\$ 511,614
Subtotal	\$ 1,078,228

C FEES AND SERVICES

Architect/Engineer	\$ 783,246
A/E Reimbursable	\$ 39,400
Commissioning	\$ 56,878
Environmental Permitting	\$ 18,760
Life Cycle Cost Analysis	\$ 10,000
Surveys/Soils/Testing	\$ 45,500
Clerk of the Works	\$ 73,500
Subtotal	\$ 1,027,284

D TOTAL PROJECT COST

\$12,337,789

PROJECT TIMELINE - RECOMMENDATION

PRESUMPCOT ELEMENTARY SCHOOL

		Local Funding	
2013	July	Site Studies	
	August		
	September	Select Architect	
	October		
	November	Referendum	
	December	Concept Design	
2014	January		
	February		
	March		
	April		Design Development
	May		
	June		
	July		Bid Documents
	August		
	September		
	October		
	November		
	December	Bid	
2015	January		
	February	Contract	
	March	Material Approval & Delivery	
	April		
	May		
	June	Construction (Renovation)	
	July		
	August	Construction (Addition)	
	September		
	October		
	November		
	December		
2016	January		
	February		
	March		
	April		
	May		
	June		Construction (Renovation)
	July		
	August	Occupancy	
	September		
	October		
	November		
	December		

Reiche Community School

Year Opened:	1972
Number of Stories:	Two
Building Area:	88,481 gsf (73,266 gsf school use areas)
Building Footprint:	56,792 gsf (including school and community use areas)
2012/2013 Student Enrollment:	376
Capacity:	373 (Based on 2012/2013 grade configurations and district class size maximums)
Full-Time-Equivalent Staff Members:	52
Site Area:	5.3 Acres
Zone:	R-6 (Residential)
Setbacks:	10 feet (Front Yard)
	20 feet (Rear Yard)
	10 feet (Side Yard for 3-Story Structures and Side Yards on Side Streets)
	5 feet (for accessory detached structures less than 144 ft ²)
Total Available Parking Spaces (approximate):	School - 65 (no accessible spaces) Community Center – 10 (including three accessible spaces)

A summary table identifying current and proposed program spaces at Reiche Community School is contained at the end of this section of the report, along with a budget summary and timeline. Existing and proposed site plans, floor plans and massing plans can be found in Appendix B.

Existing Conditions

Building Features

The Reiche School is an open concept, two-story structure that houses both an elementary school and community center. It is made up of two rectangular masses separated by a roof terrace and wide ramp that connects Brackett Street to Clark Street over the first floor entry lobby. The east mass is predominantly the school side and the west mass is a shared community/school space. The ramp is also used to get non-ambulatory students to the second floor. Most of the staff likes the sense of community the open concept allows (as long as the population is kept in the low 300's), but others agree it can be distracting to students and difficult to teach in, especially with poor acoustics. Another major concern is keeping the community component and the school component separate for security reasons. The building requires some major physical changes including separation of the two entities, ADA upgrades (including an elevator), and the creation of gypsum walls for kindergarten and Special Education (SpEd) classrooms.

There are two entrances into the building, one from the south on Clark Street and the other from the north on Brackett Street. Both enter directly under the ramp, into the lobby, which is part of the cafeteria/auditorium located to the west. This is a shared space used by the community center and the school. There is a lift in the lobby for ADA access to the raised area. The cafeteria/auditorium has a lower amphitheater level and an upper level with a seating area, small stage and storage rooms. The ceiling is two stories high with borrowed lights above in the Community and Music rooms. The area has poor acoustics.



Entrance lift to raised cafeteria/auditorium level



Main entrance lobby/cafeteria

To the north of the auditorium is a small warming kitchen, storage room, toilet room, OT/PT and Community Policing which is accessed from an outside entrance on Brackett Street. A large mechanical room is located in the northwest corner of the building. Behind the stage area is a middle school-size gymnasium. This area is accessed through a shared school/community corridor, which is one of the major concerns of staff for student exposure to the public. The corridor also has boys' and girls' group toilet rooms. On the opposite side of the corridor on the south side of the building is a bank of four locker/toilet rooms with direct access to the pool.

The pool is open during the day for the community and is used by the community and students after school. A door at the end of the corridor exits to a community parking area.



Stage/amphitheater area



Warming kitchen

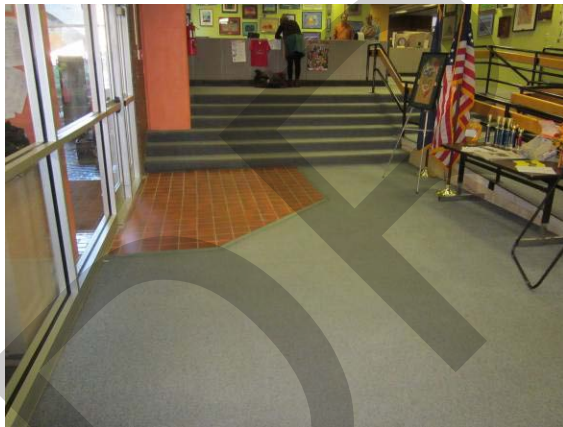


Gymnasium



Gym/pool corridor

A glass wall with doors separates the lobby from the main school building. The doors can be locked for security. Upon entry to the north, a set of six steps and a ramp lead to the main office. This area is partially open concept and has two administrative desks, a small waiting area, and a staff work area. There is also an enclosed suite with a conference area that leads into the Principal's office (utilized by the three Teacher Leaders who serve in the capacity of Principal) and the Portland Partnership Developer's office. Additional administrative areas include a staff room, staff toilets, nurse's office, SpEd office, Speech office, and a small office used for file storage and by the Psychologist.



Entrance looking toward main office



Ramp access to raised classroom level

On the same level to the east are boys' and girls' group toilets, enclosed classrooms for K/1 ELL (English Language Learners), a room for a social worker, and four kindergarten classrooms, two which share a classroom with a partial-height divider splitting the room. Following the perimeter of the building to the south and west are nine open classrooms (separated by 5-foot acoustical panels) including Title 1/Resource, Language Facilitators, three first grade classrooms, one grades 1/2 looping classroom, and two grades 2/3 looping classrooms. There is a small greenhouse addition on the outside of K/1 that is used as additional class space. There are egress stair towers on the north and east exterior side of the building. The ceilings throughout the building are exposed concrete waffle slab and the exterior walls

are brick. The open concept layout combined with these hard surfaces creates an acoustic level below State of Maine standards.



First floor open concept classrooms



First floor classroom

In the center of the building is an open concept library with a continuous set of six steps on the east and south sides leading to the raised level classrooms. The library is open to the second floor above. This area also contains an enclosed classroom for Resource, an open Read 180 classroom and a teachers' work room. None of these spaces have windows. The raised stair amphitheater area to the east of the library has a moveable wall (which is currently in disrepair). Some teachers would prefer this space to be enclosed with gypsum walls.

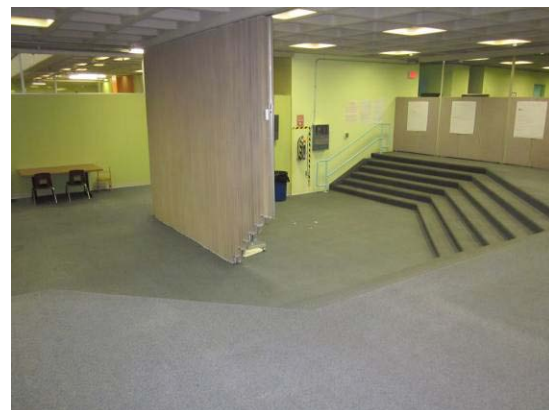


Library looking down from second floor



Library with Resource classroom beyond

Two open stairs on either end of the library connect to the second floor. In the upper northwest corner of the second floor is a community health clinic used occasionally by the students. This space has a separate entrance accessed from the roof terrace and a secondary corridor entrance on the school side. Four additional enclosed classrooms, Computer Lab, Title One, grades 3-5 Resource and the Art room are located along the north wall along with boys' and girls' toilet rooms. The remainder of the second floor



Amphitheater

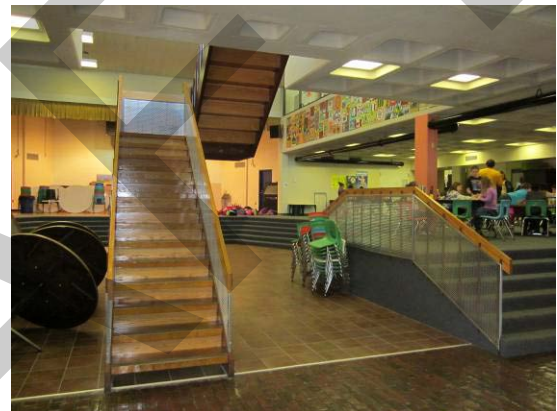
is filled with open concept classrooms housing computer storage, Math Title One, grades 2/3 ELL, grades 4/5 ELL, Resource, two third grade classrooms, one grades 3/4 looping classroom, one fourth grade classroom, and three grades 4/5 looping classrooms. These spaces surround an open atrium to the library below. There are two doors on the west side of the building that exit onto the roof terrace and connect to the Music room and a Community room. Both spaces can also be accessed from an internal stair in the lobby.



Roof terrace looking toward music room entrance



Second floor open classroom concept



Lobby stair access to music and community

Accessibility and Life Safety

The only accessible route into the school is through the Community Center/Pool, as the only code-compliant, marked accessible parking spaces on the site are in the Community Center/Pool parking lot (off of Clark Street on the west side of the school). However, these spaces appear to be intended to serve the Community Center, not the Elementary School. Current *ADA Standards for Accessible Design* guidelines require a minimum of three accessible spaces, including one van-accessible space. Compliant spaces must be adjacent to an appropriately sized access aisle.

Both the Brackett Street and Clark Street entrances are at grade (no steps). However, they are lower than the grade at the street and the downhill slopes to each entrance slightly exceed current ADA guidelines for sustained slopes for walks (5 percent maximum). The slope from the street to the Brackett Street entrance (approximately 6.2 percent at the steepest point) is steeper than the slope to the Clark Street entrance (approximately 5.4 percent at the steepest point).

The ramp at the main office area allows for access between the lobby/library level and the first floor classrooms. This ramp does not meet all detail requirements for railings and edge protection. A wheelchair lift provides access between the lobby and the raised level of the Cafeteria/Auditorium. There is no elevator for access to the second floor.



Brackett Street entrance with ramp above



Clark Street entrance with ramp above

The existing second floor access ramps on both the Brackett Street and Clark Street sides of the building do not conform to current ADA guidelines. It was also noted by both staff and the public that the ramps tend to be icy in the winter.



Second floor access ramp (Brackett Street side)



Second floor access ramp (Clark Street side)

Toilet rooms for students are not fully ADA compliant. ADA stalls are undersized and fixtures do not meet all requirements. The door hardware in the building is knob style and does not meet ADA grip requirements. Most rooms do not have signage, and if they do, it does not meet ADA requirements for tactile font, Braille and location.

Based on the unprotected, non-combustible construction of the building and the frontage around the building perimeter, the size of the school appears to exceed the IBC allowable area for a mixed use (assembly and educational) building. Though the existing size of the building was approved when it was constructed, additional fire protection measures will need to be designed into any plans for renovation or an addition. There is currently an automatic fire protection sprinkler system that provides partial coverage within the building and there is also a fire alarm system.

The fire alarm control panel is located in the main office area. Smoke detectors are located throughout the open spaces and other miscellaneous spaces. Horn/strobe type notification devices are located throughout the building, including some classrooms. Horn/strobe units are not typically mounted to be ADA compliant for coverage and mounting height. The original notification devices have been retrofitted with newer strobes to increase visibility.

Emergency egress lighting is provided by battery type units mounted in egress paths and appear to be in fair condition however additional units are required in some areas. Additional egress lighting is required at exterior egress points. LED type exit signs are located throughout the building for marking of building egress.

Life safety egress requirements are achieved by the building layout with adequate means of egress from all spaces, paths to exit access corridors and exits on both floors. Two enclosed stairs and doors to the roof terrace provide egress from the second floor. Open stairs in the library area also provide a means to the lower level. The location of the Art room and the layout of the movable partitions on the second floor create a dead end corridor that exceeds the length that is allowed by code.

Building Envelope

The existing building envelope consists of concrete masonry unit (CMU) with brick veneer and solid brick exterior wall systems. The walls are generally in good condition and provide a durable finish on both the exterior and interior. No insulation was installed when the walls were constructed and therefore these walls have insufficient thermal value. The original windows and exterior doors were recently replaced. The insulated glass windows are fixed and casement aluminum units. Exterior doors and frames in most locations are also aluminum but some of the original steel doors and frames remain. No documentation of recent roof work was found.

Mechanical/Plumbing Systems

The school is currently equipped with two new steam boilers that distribute steam to unit ventilators located throughout the building, by way of steam piping in a trench below the perimeter of the building. The boilers, located in the boiler room, are dual fuel (natural gas and #2 heating oil) HydroTherm steam boilers and are in good condition.

The steam distribution piping appears to be in fair condition and is original to the building. Space temperature control is achieved through individual thermostats located in each of the zones throughout the building.

There is a unit ventilator located along the perimeter wall in each classroom. These units are in fair condition and are operable. However, they are very inefficient, most likely provide sub-standard ventilation, and are beyond the end of their expected useful life.

Reiche was recently retrofitted with low-flow plumbing fixtures throughout the building, which are in good condition. An electric water heater provides domestic hot water for the lavatories and sinks throughout the building. The heater is in fair condition.

Electrical/Security/Communications Systems

The existing building electrical system is fed underground to a pad mounted transformer located to the north of the boiler room. The electrical service is rated for 600 amps at 277/480V, 3-phase. Information provided from CMP indicates an approximate peak demand of 165 amps (123 kVA) on the service. The existing main switchgear is located in the boiler room. The service entrance and branch panels appear to be in fair condition. Branch panels are distributed throughout the building in public spaces, recessed in walls. Although some are equipped with padlocks many others are not locked. Two branch panels are located in the boys' toilet room on the lower level.

Lighting in classrooms is surface type fluorescent recessed into waffle slab ceilings. Lens-type fixtures with energy efficient lamps and ballasts have been installed in the past two years. Occupancy sensors are utilized for energy savings in miscellaneous spaces to turn off lights when the spaces are not occupied. The gym and library lighting has been retrofitted with a high bay type high performance fluorescent fixture for energy efficiency.

Exterior perimeter lighting is provided by LED-type flood lights that have been installed in the last two years. The existing flood lighting does not appear to provide sufficient illumination to meet Illuminating Engineering Society of North America (IESNA) recommendations for parking and pedestrian areas during night events at the school.

The facility is protected with an intrusion detection (security) system consisting of a keypad and motion sensors throughout the building.

Communications systems include intercom, telephone and Wi-Fi in open areas to cover classrooms. The network systems are not located in dedicated spaces with separate climate control. The existing intercom system does not function properly and should be upgraded.

Site Circulation and Parking

The site is accessed directly from Brackett Street and Clark Street. The entrance to the school on Brackett Street is utilized significantly more and is considered to be the main entrance. There is a dedicated bus loop on the Brackett Street side of the school and a pull-off lane on the Clark Street side that is intended to be used for parent drop off and pick up. The receiving area is located in the staff parking lot on the north side of the school. However, many deliveries, such as milk, are also taken at the Clark Street entrance. The existing dumpsters are located in an enclosure on the west side of the school, adjacent to the gym and the Community Center/Pool parking lot.

Sidewalks are located around the perimeter of the site, and there are several pedestrian entry points to the site, including from Spring Street through the playground from the southeast corner of the site. There are curb cuts located at the Clark Street/Spring Street and Brackett Street/Spring Street intersections, on Clark Street in line with mid-block crosswalks, and at the entrance/exit from the staff parking lot and the Community Center parking lot. There are also curb cuts and a crosswalk where the sidewalk that runs along the west side of the building passes through the staff parking lot. There are no curb cuts or mid-block crosswalks located along Brackett Street near the main entrance or in the bus loop.

There is a total of 65 parking spaces for the school split between three parking lots: An onsite staff-only parking lot on the north side of the site that is accessed from Brackett Street (21 spaces) and two off-site parking lots for staff and visitors (with a valid permit issued by the school's main office); one located across from the school entrance on Brackett Street (approximately 26 spaces), and the other on Clark Street across from the play field on the west side of the building (approximately 18 spaces). There is also a parking lot for the Community Center and Pool which is located on the site near the western corner of building and is accessed from Clark Street (approximately 10 spaces, including 3 accessible spaces). In addition to the lots dedicated for school and community center use, there is on-street parking available in the vicinity of the site, most which is limited to one hour. There appears to be adequate parking for the school's 52 full-time-equivalent staff members. However, a lack of signage makes it difficult for visitors to determine where they should park (parking instructions are typically given by the Main Office).

The primary entrances (on Brackett Street and Clark Street) are below the grade at the street and the first floor of the school and are recessed from the face of the rest of the building. They are located beneath large ramps that serve as both a means of egress from the second floor and a mid-block connection between Brackett Street and Clark Street, which further obstructs their view from the street. It was noted by the public that the obstructed view of the entrances makes it difficult to see a child enter or exit the school from the street. As a result, parents tend to physically escort their child into and out of the school.

The sidewalks around the perimeter of the site are brick and in satisfactory condition. On site the bus loop, parking lots, playground and the majority of the walks are asphalt concrete. Sidewalks to entrances to the building on Clark Street and Brackett Street are reinforced concrete. The curbing on site is granite.



Bus loop and brick walk on Brackett Street

Oak Point Associates was present to observe traffic flow at the beginning and end of the school day in December, 2012 and January, 2013. There were three buses in the morning and afternoon that picked up and dropped off students in the bus loop along Brackett Street. In the morning, students were greeted by a staff member as they exited the bus and were directed to the playground on the east side of the school where they stayed until just prior to the start of school.

Parent drop-off and pick-up occurred primarily on Brackett Street. Parents typically parked either along Brackett Street, in the staff/visitor lot, or in the bus loop and escorted their child into and out of the school; a process that took approximately 10 minutes on average. A lack of available parking close to the main entrance on Brackett Street and in the staff/visitor lot caused many of the parents to either park illegally along Brackett Street (e.g. in areas signed as “no parking”) or park in the first 1/3 of the bus loop, which is both the closest point to the main entrance and provides a direct line-of-sight between the driver and the main entrance to the school. These parked cars blocked the bus loop and caused traffic to back up onto Brackett Street as parents waited to enter the bus loop to drop off their child. During afternoon pick-up, Portland Public Schools Transportation Services Department has also noted that buses sometimes are unable to enter or exit the bus loop due to the parked cars blocking the entrance and exit.

Parents, staff and visitors parked on the opposite side of Brackett Street from the school or used the staff/visitor parking lot on Brackett Street. People do not cross Brackett Street using a crosswalk, as there is no mid-block crosswalk. The nearest crosswalks to the main entrance on Brackett Street are located where it intersects Pine Street (+/- 530 feet northwest) and Spring Street (+/- 530 feet

northeast). It was noted by the public that several children have been injured crossing the street mid-block in this manner.

While the majority of parent pick-up and drop-off occurred on Brackett Street, some parents did utilize the pull-off lane on Clark Street, which was constructed in the last few years. However it is signed as “five minute parking” and the time limit is enforced by the City, so it was generally only used by parents that did not leave their vehicle when dropping off or picking up their child. Mid-block crosswalks were also recently added on Clark Street for parents who park their cars on the opposite side of the street or in the surrounding area.

Outdoor Play and Learning Spaces

Possibly because of its urban location, the Reiche site is currently very efficiently utilized for recreation and garden space. The building sits in the center of the site, with two large open areas to the Pine Street and Spring Street sides. There are smaller open areas between the building and Brackett and Clark Streets.

The open space to the west of the building (toward Pine Street) is adjacent to the Community Center portion of the building, and the site is dedicated to a recreational play field and full-size basketball court which are used by Reiche School for physical education classes, but not used for recess. The (approximately 0.7 acre) multi-purpose play field is very heavily utilized by the school and community sports during the fall, spring and summer months. Under-drainage appears to have been installed in 1984. The basketball court was reconstructed circa 2005. There is a water fountain near the gated entrance to the field. There is a chain link fence at the perimeter of both the field and the basketball court, restricting public use.



Basketball court



Recreational play field

The play area to the east of the school is utilized for recess, and as a community playground. It is approximately 1.5 acres in size, is enclosed by an ornamental iron fence with brick piers, and has entrances off Spring, Clark and Brackett Streets. It is comprised of three main areas: play equipment, the hard court, and the play field. The asphalt concrete hard court is a circular area approximately 100-

feet in diameter that is striped with four square, hopscotch, and a large map of the United States; and also has a ball toss. There are three brick seat walls on one side of the hard court area. Separate play equipment is provided for younger and older children. A composite play structure and small swing set (2 belt seats, 2 toddler bucket seats) are located at the north end of the playground. At the northeast corner of the playground is a curvy balance beam and a cable net climber. At the lower (southeast) side of the playground, there is a larger composite structure and 4-bay (8 belt seats) swing set intended for the older child. These areas are linked with a continuous, wood chip safe playground surface. Boulders around mature trees provide seating, and the trees provide a good balance of sunny and shady areas. There is a water fountain near the hard court area of the playground, which reportedly doesn't function well.



Playground equipment



Playground play field

The play field area is an informal lawn area at the top of a sloped area. This is the only place to play soccer and other ball sports during recess (except the hard court), and it is heavily used all year. It is very flat and poorly drained. The high volume of use on the field, even when it is wet, prevents grass from becoming established. It is often referred to as a “mud pit” by the public. The public also reported that there is a lot of dog feces in this location.

At the southeast corner of the site is a series of wood-construction fitness stations, funded by a grant to try to reduce the incidence of childhood obesity.

To the south of the school (adjacent to a mature pine grove) is the outdoor learning garden, which consists of a series of garden areas, both raised and at-grade planting areas. The garden areas are connected by gravel walkways, which connect the playground area and Clark Street entrance sidewalk, and several areas for meandering and resting. There is also a small hexagonal arbor with bench seating, and a circular area with stumps that are seating height. The learning garden has been very successful, is well maintained, and loved by the community. It is not accessible during recess. There are a few raised planting beds against the building on the east side, adjacent to the playground, but they are not as well tended. On the north side of the building, on the pathway leading from the playground to the main entrance, is a semi-circular garden that has stone block seating built into a slight berm, ringed by a

perennial and low shrub garden. Against the school exterior wall on this side are additional classroom gardens (“beneficial insect gardens”). There are also planting areas near both the Clark and Brackett Street entrances.



Outdoor learning garden



Stump seating

Utilities

Electrical service runs underground from a utility pole near the staff parking lot on Brackett Street to a transformer near the northern corner of the building. Communication service (telephone and cable) runs overhead to the northern corner of the building from the same utility pole as the electrical service.

Natural gas service runs to the building’s mechanical room (on the northern corner of the building) from Brackett Street. There is an interior oil tank in a room adjacent to the receiving area that serves as a backup to the natural gas service.

Water service is provided via a 3-inch line (potable water) and a 6-inch line (fire protection) from the 6-inch main in Brackett Street.

Sanitary sewer and roof runoff exit the building in several different locations at the building (all which ultimately drain into the combined sewer/storm drain mains in Brackett Street and Clark Street):

- A 4-inch sanitary sewer line exits the building just south of the receiving area and runs to a manhole near the entrance to the bus loop
- An 8-inch sanitary sewer line exits the building on the northeast side beneath the main office and runs to a manhole near the entrance to the bus loop (the same manhole as the 4-inch line)
- A 4-inch sanitary sewer line and a 12-inch roof drain line exit separately near the southern corner of the building and combine inside a manhole on the combined line passing beneath the playground
- An 8-inch sanitary sewer line and an 8-inch roof drain line exit separately from the western side of the building near the pool and combine in a sewer manhole near Clark Street.

- A 10-inch roof drain line exits the west side of the building adjacent to the gym and connects to an existing storm drain line that passes beneath the playfield

Grading and Drainage

The site is mostly flat and slopes to the south, where there is a small hill that slopes toward Spring Street. However, the entrances on Brackett Street and Clark Street are depressed below the grade of the street. The positioning of these entrances below the grade of the street causes runoff to flow toward them and potentially into the building. There is currently a catch basin/trench drain system at the entrances that appears to be effectively preventing this, and no drainage problems were observed in site visits during the winter of 2012 and spring of 2013.

Runoff from the staff parking lot is collected in a closed drainage system that also collects runoff from the west side of the building, the playfield, and the community center parking lot. The closed drainage system connects to the combined sanitary sewer/storm drain main in Clark Street.

While not observed during site visits, the public noted drainage problems at the play area southwest of the playground (see Outdoor Play and Learning Spaces section).

City Recreation and Facilities Management staff also noted that the grade drop across the playground is severe enough between the playground and Spring Street (approximately 6 feet in some areas) that staff members monitoring children from the hardscape area of the playground sometimes have difficulty seeing children playing along the fence on the property line.

Public Input

At the charrette held on January 10, 2013, several priorities were expressed by the members of the public who attended. Oak Point also received input from the teachers and staff at Reiche. The priorities communicated included the following:

- Improve visual control for parent drop-off and office to main entrance.
- Pedestrian and vehicular conflict at Brackett Street is an issue.
- Soccer area on the playground needs turf and a walking path was requested.
- Less pavement at the playground is desired.
- Better integration of accessible entrance and access to all areas of building.
- Separate the community and school functions and provide unique entrances.
- Maintain open concept as much as possible while providing quieter, walled classrooms for special education.
- Improve lighting, acoustics and ventilation.
- Provide consistent classroom size.

Recommendations

Building Features

The proposed concept relocates the main building entrance in order to improve building security. Relocation and designation of the Brackett Street entrance as the main point of entry along with a secure vestibule and small office expansion would create better visibility and monitoring from the reconfigured main office. An addition at the current entrance location would provide a music room that is located within the school portion of the building and on the main level. At the Clark Street entrance, an addition would allow for separate entrances for the school and community center while providing interior ADA-compliant ramps to the two lower levels and an elevator for access to the second floor.

Reconfiguration of spaces on both floors of the school would create uniform sizing of classrooms, allow for the addition of pre-kindergarten and move the Art room to the first floor. The reorganization of space adjacent to the cafeteria and gym would allow for the construction of a finishing kitchen and new student restrooms. Direct access to the gymnasium is also proposed, which would prevent the need for students passing through the community center portion of the building. Adding a second floor on the roof terrace over the cafeteria/lobby would permit the relocation of the health clinic and create additional community space that could also be used by the school as a discovery lab.

Regular classroom space arrangement is proposed to maintain the current openness of the movable partitions. Spaces requiring increased privacy, sound isolation or containment would be constructed with full height partitions.

Accessibility/Security/Life Safety

Accessible parking spaces serving the Elementary School should be added to the staff parking lot, and the relocated entrances on Brackett Street and Clark Street should be ADA-compliant. Additionally, curb cuts are recommended to be added at the mid-block crosswalk on Brackett Street. Curb cuts should also be added to the relocated bus loop to meet the request of the Portland Public School Transportation Services Department to reduce the stress on the mechanical lifts installed on the school buses.

Reconstruction of the main building entrances would improve ADA accessibility into the building by providing ramped access to the Community Center and to the lower level of the school at the Clark Street entrance. Students and staff would have direct access to the main level of the school at the Brackett Street entrance. The existing interior ramp is proposed to remain, and the existing wheelchair lift would be relocated to the south side of the Library to provide access between the two lower levels of the school. Installation of an elevator near the Clark Street entrance is recommended to provide access between all floor levels.

Construction of new staff toilets and renovation of existing student toilet rooms is proposed. Fixtures, accessories and clearances would need to meet accessibility requirements. An accessible toilet room should also be provided in the new nurse's office and should be equipped with an ADA-compliant shower. Door hardware throughout the building is recommended to be upgraded with lever handles and doors reconfigured to meet required clearances. New signage that meets ADA requirements should be provided at rooms, stairs and exits.

Existing egress will need to be maintained throughout the building and two additional exits are provided from the Community Center second floor in the proposed plan to allow for the enclosing of the existing roof terrace and removal of the exterior ramps. In order to allow for the additional area of the building and to improve protection of the occupants and the structure, an automatic sprinkler system compliant with the current NFPA 13 code will need to be installed and a fire wall be needed to separate the educational (school classrooms) and assembly (Community Center, gym and cafeteria) portions of the building.

A fire alarm system, emergency egress lighting, and exit signage should be provided to meet current NFPA code requirements.

Security systems should be upgraded to include access controls (card key system), CCTV cameras and intrusion detection coverage for the building. These systems are recommended to be integrated with district-wide systems for uniform monitoring and system administration.

Building Envelope

The existing exterior wall system is recommended to receive insulation to improve its thermal performance. The application of a rigid insulation and metal wall panels finish system on the building exterior would appear to be the most appropriate approach to achieve a continuous thermal barrier over the exterior brick and exposed concrete of the second floor structure.

Reconfiguration of spaces within the building and the desire for improved daylighting would necessitate the addition of windows in several locations. New windows are proposed to be thermally broken aluminum units with insulated glazing.

New construction should incorporate thermal resistance values consistent with ASHRAE requirements into the design of the entire building envelope. A brick veneer, exterior wall system and aluminum windows and storefronts are proposed for the building additions. Airlock vestibules are recommended at each exit to reduce heat loss in these locations. A TPO membrane and rigid insulation roof system with skylights in strategic locations for introducing daylight into the building should also be included in the design of the new addition.

Mechanical/Plumbing Systems

The existing unit ventilators and air handler should be removed due to their age and poor condition, and high efficiency heating and ventilating systems should be provided. Heating in the spaces is recommended to be accomplished through the use of fin tube radiation or radiant heating panels in each of the spaces. The boilers are new and should remain in service and be converted to hot water to serve the new terminal equipment. The distribution piping should be replaced to accommodate the new floor plans.

Energy Recovery Ventilators (ERVs) are recommended to provide ventilation to all spaces in compliance with ASHRAE ventilation standards. ERVs pre-condition the incoming fresh outside air by extracting heat from the exhaust through the use of an air-to-air heat exchanger that prevents the outside and exhaust air streams from mixing. Fans located in the ERVs would distribute fresh air to each of the spaces and remove exhaust air through a new, overhead ductwork system.

Air conditioning is recommended in selected spaces (offices, library, etc.) through the use of high-efficiency, environmentally friendly, refrigerant-based systems, such as a variable flow refrigerant system and/or air-to-air heat pump. Outdoor condensing units should be located on the roof or at grade along the side of the building.

Additional sustainability features (in addition to the ERVs and high efficiency cooling systems) that are under consideration to be incorporated into the design include a solar domestic water heating system and a building energy management system. The solar heating system would consist of evacuated solar tube arrays located on the roof that would produce hot domestic water for use in the lavatories and sinks. Highly insulated tanks would be installed in the boiler room to store the heated water for use after the sun goes down. The energy management system would consist of a Direct Digital Control (DDC) system that would control all of the HVAC equipment in the building. Real-time energy usage would be monitored by the system and adjustments would automatically be made to the mechanical systems operations, without affecting occupant comfort, in order to maximize energy efficiency.

The existing plumbing fixtures should be salvaged and re-used since they are in good condition. A new high-efficiency domestic water heater is recommended, which should be integrated with the solar water heating system described above.

Electrical/Communications Systems

Electrical service equipment will most likely need to be upgraded due to age and should be sized to meet future loads associated with building renovations and additional HVAC loads. Electrical equipment should be installed in dedicated electrical spaces. Electrical upgrades should include additional power for general classroom use and increased computer loads throughout the building.

Classroom lighting is recommended to be upgraded to include local control within each space, controls for daylight harvesting and enhanced for utilization of educational AV systems. Energy-efficient fluorescent fixtures are recommended to improve quality of light and flexibility for classroom AV systems.

Exterior lighting should include energy efficient LED and low glare type fixtures for parking and pedestrian areas. Lighting levels should be designed to meet current IESNA recommendations.

Building telecom design should include dedicated climate-controlled spaces for data/telephone systems and entrance facility. Classrooms are recommended to include wired and wireless network access, VoIP phone, intercom, interactive AV, and classroom sound enhancement systems.

Site Circulation and Parking

On the Brackett Street side of the school, the main entrance is recommended to be relocated to the east to provide better visibility and security. A mid-block crosswalk could be added directly in line with the new entrance, with appropriate signage being added along the street. The bus loop would also be moved east of its current location and widened to allow for easier maneuvering of the buses. Also, the removal of the ramp and the relocation of the bus loop would allow for the expansion of the staff parking area, increasing the available parking capacity by 10 spaces to 75 (including the three accessible spaces).

On the Clark Street side of the school, the entrance will no longer be recessed, providing parents with better visibility of their children entering and exiting the school. The removal of the ramp on Clark Street would allow the existing pull-off lane to be extended by approximately two spaces, and the restriction on parking time should be extended to 15 minutes, allowing parents to escort their children into the school (conversations with parking and transportation representatives from the City indicated that the time limit change would be acceptable). The intent of these changes is to provide more of an incentive to use the Clark Street side of the building as the primary entrance for children being brought to school by car, thus reducing congestion on Brackett Street (Clark Street has considerably less traffic than Brackett Street).

Additional wayfinding signage should also be added to provide visitors to the site with clearer directions on where to park.

Outdoor Play and Learning Spaces

For the most part, the outdoor play and learning spaces at Reiche are working well for the school community. The biggest issues seem to be the drainage and surface of the informal play field at the playground, and the amount of pavement (which some thought to be excessive). Because the walkways are plowed by the City of Portland, a minimum width needs to be maintained. A walking path was also requested.

In conversation with the City Arborist, it appears that there have been many attempts to maintain a good stand of turfgrass at the informal play field, but none have been successful. He recommended trying a synthetic turf field, but because of the dog feces issue and increased maintenance needs of a synthetic turf field, this recommendation was not supported by the Recreation Department. The solution may be a combination of physical (better soil and drainage) and policy (not allowing use during wet periods or using the other play field during recess), but further study of this feature is needed.

The proposed site plan shows a small reduction in the walkway width and circular hard court space area, an increase in the number and size of natural playground areas (interspersed with existing playground equipment areas), and a walking path that meanders through and around the playground equipment.

Utilities

Electrical and communications services are recommended to be upgraded and a new transformer provided. Also, at the request of Portland Public Schools, a pad and conduit has been scoped for a future generator (the exact size of the pad will need to be coordinated with the generator model PPS anticipates using).

A new fire protection service should be provided via a new connection to the water main in Brackett Street. The existing potable water and gas services to the building can accommodate both the existing building and the proposed additions. The existing sanitary sewer lines exiting the building appear to be able to accommodate both the existing building and the proposed additions.

To comply with federal regulations, the City is in the midst of a project to separate the storm drainage and sanitary sewer flows. Because of this, all new roof drain and foundation drain lines cannot be piped directly into the combined lines. New roof drains from building additions at the entrances, and any nearby existing systems that can be easily re-directed should be connected to catch basins and drain manholes on site to allow for future separation from the combined system.

Grading and Drainage

The areas near the relocated entrances are recommended to be re-graded to provide adequate drainage away from the building. The closed drainage system in the staff parking lot should be expanded to collect runoff from the parking lot addition. The drainage patterns in the relocated bus loop will be similar to the existing drainage patterns.

At the request of the Recreation Department, and to aid staff by increasing visibility of children playing along the fence on the southeast side of the playground along Spring Street, the existing grade is recommended to be raised slightly and a small retaining wall added that would run along the existing fence line.

Stormwater treatment for new impervious surfaces should be provided on the site as required by both City and State requirements (current City of Portland requirements are more stringent than state requirements as they relate to triggers for stormwater treatment systems being required). These stormwater treatment systems could include bioretention areas to collect runoff from the staff parking lot and the bus loop area. Conversations with Stormwater Management representatives for the City have indicated that there is a high degree of likelihood that the City will be implementing a stormwater fee system for impervious surfaces on a site. Any stormwater treatment provided on the site would likely offset a portion of this fee.

Site Elements

There is currently a small storage shed located beneath the ramp on the Clark Street side of the building that will be removed when the ramps are demolished. This shed currently stores equipment for the outdoor learning garden. At the request of the school, a storage shed (approximately 144ft²) is recommended to be constructed near the gardens on Clark Street side of the building that can be used to house gardening tools and other maintenance equipment. An additional storage shed (approximately 144ft²) should be constructed near the gym that can be used to house exterior and gasoline-powered equipment, such as snow blowers and small lawn mowers.

Reiche Community School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
									Pre-K	1		1075			1075	15	15
Kindergarten	1		1150			1150	18	18	Kindergarten	1		1195			1195	18	18
Kindergarten	1		870			870	18	18	Kindergarten	1		1150			1150	18	18
Kindergarten	1		715			715	18	18	Kindergarten	1		1090			1090	18	18
Kindergarten	1		690			690	18	18	Kindergarten	1		1020			1020	18	18
1st	1		930			930	20	20	1st Grade	3		815			2445	20	60
1st	1		895			895	20	20	1st & 2nd Loop	1		815			815	20	20
1st	1		700			700	20	20	2nd & 3rd Loop	1		805			805	20	20
1st & 2nd Loop	1		1280			1280	20	20	2nd & 3rd Loop	2		785			1570	20	40
2nd & 3rd Loop	1		1050			1050	20	20	3rd Grade	2		775			1550	23	46
2nd & 3rd Loop	2		930			1860	20	40	3rd & 4th Loop	1		780			780	23	23
3rd Grade	1		1270			1270	23	23	4th Grade	1		745			745	23	23
3rd Grade	1		1090			1090	23	23	4th & 5th Loop	1		780			780	23	23
3rd & 4th Loop	1		985			985	23	23	4th & 5th Loop	2		775			1550	23	46
4th Grade	1		665			665	23	23									
4th & 5th Loop	1		1455			1455	23	23									
4th & 5th Loop	1		1280			1280	23	23									
4th & 5th Loop	1		925			925	23	23									
Math/Title 1	1		600			600			Math/Title 1	1		775			775		
Title 1	1		1280			1280			Title 1	1		605			605		
Title 1	1		385			385			Title 1	1		510			510		
Title 1/Resource	1		500			500			Title 1/Resource	1		840			840		
Resource	1		650			650			Resource	1		650			650		
3rd - 5th Resource	1		880			880			3rd - 5th Resource	1		835			835		
Read 180	1		660			660			Read 180	1		660			660		
OT/PT	1		315			315			OT/PT	1		650			650		
Speech	1		130			130			Speech	1		125			125		
Kindergarten & 1st ELL	1		585			585			Kindergarten & 1st ELL	1		585			585		
2nd & 3rd ELL	1		735			735			2nd & 3rd ELL	1		785			785		

Reiche Community School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
Reception/Main Office	1		760			760			Main Office	1		380			380		
Principal	1		150			150			Principal	1		140			140		
Conference	1		250			250			Conference	1		375			375		
Teachers' Room	1		360			360			Teachers' Room	1		565			565		
Portland Parnership Developer	1		185			185			Portland Parnership Developer	1		140			140		
Social Worker	1		225			225			Social Worker	1		265			265		
Special Education Office	1		130			130			Special Education Office	1		165			165		
Nurse	1		225			225			Nurse	1		315			315		
Conference/Files/Psych	1		130			130			Conference	1		235			235		
									Work Room	1		145			145		
Work Room	1		365			365			Work Room	1		365			365		
Office	1		160			160			Office	1		160			160		
Community Space									Community Space								
Community Counseling	1		275			275											
Community Policing	1		175			175			Community Policing	1		180			180		
Rec Storage	1		295			295			Rec Storage	1		295			295		
Health Clinic	1		1740			1740			Health Clinic	1		1230			1230		
									Health Clinic	1		650			650		
Community Room	1		1680			1680			Community Room	1		1315			1315		
									Discovery Lab	1		1460			1460		
CAPACITY								373	CAPACITY								388
TOTAL NET AREA (SF) *								51855	TOTAL NET AREA (SF) *								53360
Structure/Circulation/Mech/Utility								21411	Structure/Circulation/Mech/Utility								23351
TOTAL GROSS AREA (SF) *								73266	TOTAL GROSS AREA (SF) *								76711
GROSS SF PER STUDENT								196	GROSS SF PER STUDENT								198

* Total area does *not* include community space

Buildings for Our Future
Portland Public Schools
Elementary Schools, Grades PreK-5

Oak Point Associates

**Reiche Community School
Project Budget**

Implementation of the "facility equity model" with energy and sustainability upgrades, outdoor curriculum enhancements and building and site improvements.

A NEW CONSTRUCTION

Renovation/Reconfiguration	\$ 7,838,031
New Construction/Addition	\$ 1,047,580
Demolition	\$ -
Built in Equipment	\$ 408,000
Site Development	\$ 682,320
Subtotal	\$ 9,975,931

B ADMINISTRATIVE COST & RESERVE

Temporary Classrooms	\$ -
Advertising/Insurance/legal	\$ 55,000
Bid Contingency 5%	\$ 498,797
Construction Contingency 5%	\$ 498,797
Subtotal	\$ 1,052,594

C FEES AND SERVICES

Architect/Engineer	\$ 904,242
A/E Reimbursable	\$ 39,400
Commissioning	\$ 74,578
Environmental Permitting	\$ 18,760
Life Cycle Cost Analysis	\$ 10,000
Surveys/Soils/Testing	\$ 34,500
Clerk of the Works	\$ 73,500
Subtotal	\$ 1,154,980

D TOTAL PROJECT COST

\$12,183,505

PROJECT TIMELINE - RECOMMENDATION

REICHE COMMUNITY SCHOOL

		Local Funding	
2013	July	Site Studies	
	August		
	September	Select Architect	
	October		
	November	Referendum	
	December	Concept Design	
2014	January		
	February		
	March		
	April		Design Development
	May		
	June		
	July		Bid Documents
	August		
	September		
	October		
	November		Bid
	December		
2015	January	Contract	
	February		
	March	Material Approval & Delivery	
	April		
	May		
	June	Construction (Renovation)	
	July		
	August	Construction (Addition)	
	September		
	October		
	November		
	December		
2016	January		
	February		
	March		
	April		
	May		
	June		Construction (Renovation)
	July		
	August	Occupancy	
	September		
	October		
	November		
	December		

Fred P. Hall Elementary School

Year Opened: 1956
Major Addition: 1967
Number of Stories: One
Building Area: 54,036 gsf
2012/2013 Student Enrollment: 420
Capacity: 447 (Based on 2012/2013 grade configurations and district class size maximums)
Full-Time-Equivalent Staff Members: 68
Site Area: 21.2 Acres
Zone: R-3 (Residential)
Setbacks: 25 feet (Front and Rear Yards)
..... 16 feet (Side Yard for 2-1/2 Story Structures)
..... 20 feet (Side Yards on Side Streets)
..... 5 feet (for accessory detached structures less than 144 ft²)

Additional Site Constraints

- (See also Site Constraints Plan):.....
- On-site subsurface sand filter proposed as part of recently approved Capisic Brook Watershed Management Plan.
 - Northern half of the site is in Capisic Brook watershed (Capisic Brook is classified as “Urban Impaired Stream” by the Maine DEP).
 - Ravine/steep slopes along northern side of the site (adjacent to Capisic Brook).
 - Unnamed stream on southern part of the site.
 - Small wetland area located in the western part of the site and several other small wetland areas located at various locations on the site.
 - Wooded area on southern half of site is desired to become part of City’s “Land Bank.”
 - Portland Water District right-of-way runs north to south through the center of the site.
 - A sewer main runs from the northwest side of the site (at the end of Purchas Street) northerly through the center of the site, adjacent to the Water District right-of way.

Total Available Parking Spaces

(approximate): 78 marked spaces (including three accessible spaces), but only 63 are regularly used (15 are located adjacent to the playground area and are barricaded to discourage vehicles from parking in them).

A summary table identifying current and proposed program spaces at Fred P. Hall Elementary School is contained at the end of this section of the report, along with a budget summary and timeline. Existing and proposed site plans, floor plans and massing plans can be found in Appendix B.

Existing Conditions

Building Features

Through multiple facility condition assessments over the past several years, Portland Public Schools has determined that Hall School is a candidate for new construction, rather than major renovation. Since the Buildings for Our Future project included working within the assumption that the existing school is slated for replacement, a description of the current building's features, configuration, mechanical and electrical systems and deficiencies is not included in this report.

General

Hall School is located on a 21.2-acre site within a residential neighborhood, just north of Brighton Avenue in the Nason's Corner neighborhood of Portland. The school is located on Orono Road, a short distance from Warwick Street. Capisic Brook runs along the northern part of the site (just north of the school building), within a wooded area. The southern half of the site is also wooded, with stream/wetland areas. The school facility is located at the center of the site.

Site Circulation and Parking

The site entrance is a one-way driveway from Warwick Street. On site, the entrance drive splits into a dedicated bus loop, a parent loop/parking bay, and a second parking bay. The site exit is at the end of Orono Road, a short (approximately 250 feet) two-way street that connects to Warwick Street just south of the site entrance. The site has 78 total marked parking spaces (including three accessible spaces) split into two parking areas: one staff/visitor lot on the east side of the school, near the main entrance and bus/parent loops (approximately 63 spaces, including three accessible spaces); and one on the south side of the school, adjacent to the playground (approximately 15 spaces) that is used as part of the playground and is barricaded to discourage vehicles from parking in it.

There are sidewalks leading to the site along Warwick Street and Orono Road, from the end of Godfrey Street, and on site. There are also walking paths onto the site from the end of Pinecrest Road and the wooded area on the southern half of the site.

The existing receiving area for the school is located on the south side of the gym and accessed from the entrance drive.

The pavement on the site is asphalt concrete. Curbing within the parking lots and parent loop is granite. All other curbing on the site is asphalt concrete.



Pavement and sidewalk

Oak Point Associates was present to observe traffic flow at the beginning and end of the school day in December, 2012 and January, 2013. It was observed that student drop-off and pick-up for children riding the bus occurred in the bus loop in front of the school. Five school buses were observed at morning drop-off (staff interviews suggest there may be five or six) and three buses in the afternoon. Morning parent drop-off occurred along the parent loop. In the afternoon, parents parked their vehicles and waited in the playground area for their children.

Morning drop-off was well organized. Parents dropped off children along the parent loop, where they were greeted by a staff member and escorted across the bus loop to the main entrance. This process took approximately 2-3 minutes. Parents did not generally park their car and escort their child into the school unless they arrived late. Some children walked to school from neighboring Sagamore Village (to the west) and the neighborhood to the north of the school.

Afternoon dismissal was staggered: children riding the bus were dismissed first (from the main entrance) followed by those being picked up in vehicles (into the playground from the southern entrance) and children walking home (from the main entrance and entrances on the north and south sides of the building).

Parents picking up their children parked their cars on site and waited for their children in the playground area. A lack of available parking spaces forced parents to park illegally along the entrance drive, the parent loop, and the exits out of the parking areas, the exit drive, and Orono Road (which is only 24 feet wide and signed "no parking"). This made it difficult for people parked legally to get out of their parking spaces, and in some instances they were forced to wait in their vehicles until the illegally parked cars were moved. City Transportation staff noted that on some occasions (particularly in the winter) parked cars constrict the site exit and Orono Road so much that buses are unable to fit and parents have to be notified to move their vehicles immediately.

Accessibility

The site has three standard width spaces marked as accessible with adjacent access aisles. Current *ADA Standards for Accessible Design* guidelines require a minimum of four accessible spaces, including one van-accessible space. Compliant spaces must be adjacent to an appropriately sized access aisle.

The majority of the site entrances are at grade, and there are accessible curb cuts located at the main entrance, gym entrance and the playground entrance.



Main Entrance



Playground Entrance

Outdoor Play and Learning Spaces

Outdoor play and learning spaces on site include the playground, a baseball field, and woodland trails. The playground area is to the south and west of the school building. Directly adjacent to the school on both sides are asphalt concrete hard court areas that are utilized for four square, hopscotch, basketball, and other games. The hard court to the south has parking spaces striped on one side, although access to this area is limited by jersey barriers and orange cones (vehicles were parked in this area during visits to the site). There



Existing playground



Woodland trail

are two swing sets, two composite playground structures and a couple of stand-alone climbers to the south of the paved area. The children are allowed to play in a large pine grove (to the southeast of the play equipment) during recess. There is also a garden (the "Kindergarten garden") near the south entrance to the school, where parents gather to meet children at dismissal. Stripes painted on tree trunks indicate the limit to

which they are allowed to go. To the west of the school, near the baseball field, is a series of wood-construction fitness stations, funded by a grant to try to reduce the incidence of childhood obesity.

The baseball field is utilized by little league and youth soccer. The quality of the field has been reported to be lacking.

A trail runs alongside Capisic Brook, between the school building and the brook. This trail offers the opportunity for outdoor learning, and many teachers report using the trail for classroom activities. This trail, and the trail to the south of the playground, are part of the Portland Trails network, and are a pedestrian link between Evergreen Cemetery and the Fore River Sanctuary.

A schoolyard garden is located to the right of the main school entrance, in a courtyard created by the gym wing. It includes a number of planter boxes, planting beds, and seating. The garden location is directly outside the location of the building fire that occurred in September 2012.

Utilities

Electrical and communications (telephone and cable) service runs overhead from Purchas Street to a utility pole on site just south of the baseball field. From there, communications runs overhead to the western side of the building and electrical service runs underground to a transformer located on the northwest side of the building.

Heating fuel for the boiler is provided by an exterior underground oil tank located just off the southern side of the mechanical room, on the west side of the building.

Water service for both potable water and the building's sprinkler system are run to the mechanical room on the west side of the building from a 20-inch diameter cast iron water main that runs through the center of the site, from the end of Pinecrest Road to the north to the end of Wessex Street to the south (installed circa 1914). The water line is run within a 50-foot-wide right-of-way belonging to the Portland Water District.

There is also a sewer right-of-way on the site containing a 30-inch diameter storm drain line and a 10-inch diameter sanitary sewer line that convey stormwater runoff and sanitary sewage from Sagamore Village. The right-of-way originates at the northern end of Purchas Street and continues north to the western side of the baseball field. From there, it heads easterly toward the school before continuing northerly alongside the Portland Water District water right-of-way. The sewer and storm drain lines in this right-of-way enter the site as separate lines running parallel to each other. On the north end of the site, the storm drain line flows through a diversion manhole where smaller drainage flows are diverted into a grit chamber before combining with the sanitary sewer line and exiting the site at the end of Pinecrest Street. Larger stormwater flows bypass the grit chamber and are discharged directly into Capisic Brook instead of being discharged into the sanitary sewer system.

Sanitary sewer lines run from the school to a sewer manhole located on the east side of the baseball field that is connected to the sanitary sewer main in the sewer right-of-way. Roof drain lines appear to be connected to the storm drain in the sewer right-of-way at a drain manhole near this sewer manhole.

Drainage and Grading

The developed portion of the site is very flat, with the southern half of the site draining to a stream/wetland located in the wooded area on the southern portion of the site. The northern half of the site drains to Capisic Brook which flows along the northern side of the site at the bottom of a deep ravine (as much as 20 feet in some places). The top of this ravine is generally located at the edge of the tree line on the northern side of the school, approximately 25-30 feet from the building face.

Runoff from the bus and parent loops- as well as the parking areas on the east side of the building- flows into a closed drainage system that discharges into Capisic Brook near the northeast corner of the site. There are also two storm drain outlets that appear to be foundation drain outlets in the slope off of the northeast corner of the building that discharge into Capisic Brook. Runoff from the playground area flows into a closed drainage system that is connected to the 30-inch storm drain line running on the west side of the school.

Areas of poor drainage have been noted on the developed portion of the site, particularly on the west side of the school. Small wetlands were observed both along the western edge of the site, near Kervin Street and near the end of Purchas Street. Poor drainage in the baseball field and the area near the northwest corner of the school was also reported by school staff.

Public Input

At the charrette held on January 17, 2013, several priorities were expressed by members of the public in attendance. Oak Point also received input from teachers and staff at Hall School. The priorities communicated included the following:

- Outdoor learning spaces with vegetable gardens and natural play areas
- Indoor and outdoor performance areas
- Maintain the wooded nature of the site
- Safe and secure building entrance
- Natural daylighting in classrooms
- State of the art technology
- Proper classroom acoustics
- A separate gym and cafeteria
- Small breakout areas and meeting spaces
- Incorporate the aquarium into the new building plan

Recommendations

Building/Site Layout Strategies

A number of factors influence the siting of a new school building and associated site amenities on the existing Hall School site, including:

- Keeping the existing school operational to the greatest extent possible during the construction period.
- Providing optimal solar orientation for the new building to maximize both visual comfort and energy efficiency.
- Minimizing clearing on the site, especially near the wooded area on the southern half of the site, which the City desires to add to its “Land Bank.”
- Minimizing the disruption to existing utility infrastructure (water, sewer, and storm drain lines) that run through the site.
- Limiting building construction near the existing ravine on the north side of the site (along Capisic Brook).
- Providing space for a subsurface stormwater treatment system for offsite stormwater runoff from Sagamore Village (recommended as part of the Capisic Brook Stormwater Management Plan submitted to the City in 2012 and approved for implementation).

To meet these parameters, it is recommended that the new school be constructed on the west side of the existing school, with its footprint only overlapping a small portion of the northwestern wing of the existing school. This would not interfere with the building’s utilities and, therefore, allow the majority of the school to remain operational during the construction period, as well as allow for possible construction access via Purchas Street or Pinecrest Road instead of from the main school vehicular entrance. The small number of classrooms in the portion of the building proposed to be removed could be placed in portable classrooms until the new school construction is completed, at which point the remainder of the existing wood-framed structure would be demolished.

Insufficient parking area and poor site circulation were noted as significant problems on site. Thus, it is important that adequate parking be provided for the full-time equivalent staff members (estimated to be between 72 and 75 based on projected enrollment), as well as visitors to the school and accessible parking. Adequate queuing space for parents and buses is also required.

Two different concepts were developed to address these concerns: “Option A” and “Option B.” These concepts maintain the same general elements on the site but have significantly different parking and circulation patterns.

As there is a significant population of students that walk to school, both options also maintain the existing pedestrian access points to the site (sidewalks along the site entrance at Warwick Street and the site exit at Orono Road, and walkways near Godfrey Street/Purchas Street and at the end of Pinecrest

Road) as well as the existing trails along Capisic Brook and through the wooded area on the southern half of the site.

Building Features

The proposed concept furnishes enough capacity for approximately 523 students, including the addition of a pre-kindergarten (pre-K) class. Four classrooms for each grade of students in kindergarten through fifth are proposed to support the increased capacity. Core spaces (library and separate gym and cafeteria) would also be furnished at a size that supports the proposed capacity. The gymnasium is recommended to have a middle-school-sized basketball court with bleacher seating for half of the student enrollment. A performance stage, office and storage rooms for the school and recreational department are also recommended. Music and Art programs are proposed to have appropriately sized classrooms with proper storage rooms and a separate room for the kiln. Administrative spaces, Special Education rooms, work rooms and a sufficient number of staff and student toilet rooms would be provided to support the educational program.

Interior Finishes

Proposed interior finishes are planned to be durable and sustainable and may include carpet, linoleum, tile, and SAT ceilings as well as natural materials.

Accessibility and Life Safety

The building entrance must be handicapped accessible and an accessible route needs to be provided throughout the entire school building. An elevator would be needed to provide access to the second floor. Access to the stage is proposed to be provided by a ramp. Door hardware throughout the building needs to include lever handles and required clearances will need to be provided at all doors. Signage that meets ADA requirements should be provided at rooms, stairs and exits. ADA toilet rooms are proposed for students and staff. Fixtures, accessories and clearances will also need to meet accessibility requirements. An accessible toilet room should be provided in the new nurse's office and should be equipped with an ADA-compliant shower.

A minimum of two means of egress must be provided from all areas of the building and a minimum of two exits must be provided from the second floor. An automatic sprinkler system compliant with the current NFPA 13 code is proposed to allow for the planned size of the building and to provide protection of the occupants and the structure.

A fire alarm system, emergency egress lighting, and exit signage should be provided to meet current NFPA code requirements.

Building Envelope

New construction should incorporate thermal resistance values consistent with ASHRAE requirements into the design of the entire building envelope. A brick veneer, exterior wall system with rigid insulation and an air/vapor barrier is proposed. Aluminum windows and storefronts are proposed, with insulated glazing. Sun shades and light shelves would improve natural daylighting on the south side of the building. Airlock vestibules are recommended at each major exit to reduce heat loss in these locations. A TPO membrane and rigid insulation roof system with skylights in strategic locations for introducing daylight into the building should also be included in the design of the new building.

Proposed Plans

Floor plans for Options A and B propose solutions to provide the established building program, accessibility, life safety and building envelope parameters. Both options group classrooms by grade levels (Pre-K/kindergarten, first/second grade and third/fourth grade) and integrate resource rooms with the appropriate grades. Special Education is proposed to be centrally located in a suite for sharing of resources and minimizing student transition time to and from specialists. Administrative and public use spaces should be easily accessible at the front of the building and classroom wings are proposed to be configured so that they can be secured during non-school hours. In both options, classrooms for third, fourth and fifth graders are located on the second floor while classrooms for younger students and all spaces used by those students are located on the first floor. The options show opportunities for variation in location of core spaces to work with the two proposed site layouts.

Mechanical/Plumbing Systems

A high efficiency heating and ventilating system should be provided. The new heating system is proposed to consist of three high-efficiency, natural gas condensing boilers, which can operate at ultra high efficiencies when coupled with terminal devices, such as radiant panels, fan coil units or radiant floor heating, located in each space that are designed to operate using low-temperature heating water (in the range of 90°F to 120°F). Boiler efficiencies exceeding 95% can be achieved with a system such as this. The distribution piping will be well insulated to minimize stand-by losses associated with heating water distribution piping.

Energy Recovery Ventilators (ERVs) are recommended to provide ventilation to all the spaces in compliance with ASHRAE ventilation standards. ERVs pre-condition the incoming fresh outside air by extracting heat from the exhaust through the use of an air-to-air heat exchanger that prevents the outside and exhaust air streams from mixing. Fans located in the ERVs would distribute fresh air to each of the spaces and remove exhaust air through an above-ceiling ductwork system.

Air conditioning should be provided in selected spaces (offices, etc.) through the use of high-efficiency, environmentally friendly, refrigerant based systems, such as a variable flow refrigerant system or an air-to-air heat pump system. Outdoor condensing units should be located on the roof or at grade along the side of the building.

Additional sustainability features (in addition to the ERVs and high efficiency cooling systems) that are under consideration to be incorporated into the design are a solar domestic water heating system and a building energy management system. The solar heating system would consist of evacuated solar tube arrays located on the roof that would produce hot domestic water for use in the lavatories and sinks. Highly insulated tanks would be installed in the boiler room to store the heated water for use after the sun goes down. The energy management system would consist of a Direct Digital Control (DDC) system that would control all of the HVAC equipment in the building. Real-time energy usage would be monitored by the system and adjustments would automatically be made to the mechanical systems operations, without affecting occupant comfort, in order to maximize energy efficiency.

Low flow plumbing fixtures are recommended, to conserve water. A high-efficiency domestic water heater should be provided and integrated with solar water heating system described above.

Electrical/Security /Communications Systems

Electrical service equipment should be provided and designed sized to meet loads for the proposed building. Electrical equipment should be installed in dedicated electrical spaces. Electrical distribution should include power for general classroom use and computer loads throughout the building.

Classroom lighting is recommended to include controls for daylight harvesting and enhanced for utilization of educational AV systems. Pendant-mounted direct/indirect, energy-efficient fluorescent fixtures are recommended for high quality of light and flexibility for classroom AV systems.

Exterior lighting should include energy efficient LED and low glare type fixtures for parking and pedestrian areas. Lighting levels should be designed to meet current Illuminating Engineering Society of North America (IESNA) recommendations.

The location of the building entrance should be such that it allows for direct visual monitoring from the main office, and a controlled access point at the entry vestibule should be provided.

Security systems should include access controls (card key system), CCTV cameras and intrusion detection coverage for the building. These systems are recommended to be integrated with the district-wide systems for uniform monitoring and system administration.

Building telecom design should include dedicated climate-controlled space for data/telephone systems and telecom entrance room. Classrooms are recommended to include wired and wireless network access, VoIP phone, intercom, interactive AV, and classroom sound enhancement systems.

Parking and Site Circulation - Option A

Option A eliminates the site entrance on Warwick Street and utilizes Orono Road as both a site entrance and exit. A dedicated bus loop separates on site bus traffic from parent and staff traffic. A large parking lot on the south side of the school would be utilized for staff/visitor parking and a long pull-off lane along the east and north sides of the parking lot be used for parent drop-off and pick-up.

This separation of bus traffic from parent traffic helps to eliminate transportation department concerns with parked cars blocking bus traffic. However, improvements may be required on Orono Road to ensure that it would be able to accommodate the increase in two-way traffic. Additionally, the small radius of the bus turn around would make it more difficult to maneuver the buses around the loop, particularly when parked buses are present.

Parking and Site Circulation - Option B

Option B maintains the existing site entrance and exit (thus potentially reducing the amount of improvements necessary on Orono Road). Circulation for parents and staff are generally similar to the existing site, but the parking lot has been expanded to allow for an adequate number of parking spaces. Additionally, a longer pull-off lane has been added for parent pick-up and drop-off and adequate drive aisle width has been provided to prevent cars parked in the pull-off lane from interfering with vehicle circulation in the parking lot.

The bus loop is separated from parent and staff traffic, but students, parents, and teachers must cross it to get to the parking area (a crosswalk would be included across the bus loop in line with the main entrance). Additionally, the linear nature of the bus loop would allow the buses to queue up closer to the main entrance than in Option A.

Outdoor Play and Learning Spaces

In both options, the proposed building location would displace the baseball field, and it should be relocated on site. The playground should be sited to take advantage of natural play opportunities near existing trail networks and appropriate natural features (such as the pine grove). The playground should provide an adequate quantity of play features to serve the population that uses it, should accommodate after-school programming needs, and incorporate natural play and learning into the design. The playground should be designed to foster all types of physical development, as well as imaginative play.

Utilities and Grading

The recommended building location in both options is directly on top of the existing sewer/storm drainage lines that run from the end of Purchas Street northerly across the site. These lines would need to be relocated westerly so that they flow behind the proposed school before connecting to the existing line in the vicinity of the existing grit chamber (south of the Capisic Brook crossing). Additionally, the proposed subsurface treatment system (indicated to be 10,000 ft² in the Capisic Brook Management Plan) could be located near the end of Purchas Street.

It is recommended that new water service (both potable and fire protection) for the school be connected to the existing water main beneath Purchas Street.

Conversations with the Portland Water District have indicated that the existing 20-inch diameter water main and corresponding 50-foot wide easement running through the site from Wessex Street to Pinecrest Street can be discontinued and the portion of the water main beneath the proposed disturbance can be removed as required. The portions of the pipe located in areas that would not be disturbed can be capped and abandoned in place. However, to maintain redundancy in their water distribution system the Water District would require that if the existing 20-inch line is discontinued, a new line must be constructed from the intersection of Godfrey Street and Purchas Street to the intersection of Orono Road and Warwick Street. A 50-foot wide right-of-way would also need to be established for the line. Additionally, services connected to the existing line in Orono Road (which would also be required to be removed) would need to be connected to the new line. As part of abandoning the 20-inch main, the water district would also require that all existing services on Wessex Street (approximately 6 services) be connected to a new main that would extend south to the main beneath Brighton Avenue.

New electrical and communications (telephone and cable) services are recommended to be provided from the existing utility pole at the end of Purchas Street, with a new transformer provided. Also, at the request of Portland Public Schools, a pad and conduit has been scoped for a future generator (the exact size of the pad will need to be coordinated with the generator model PPS anticipates using).

Natural gas service is recommended to be run to the proposed school from either the existing natural gas main located beneath Purchas Street or the existing main beneath Warwick Street (the final point of connection would need to be determined by Unitil, the current natural gas supplier for the City).

The site would be graded as required to provide code-compliant parking and pedestrian routes, playfields and playgrounds and positive drainage away from the building entrances.

Stormwater treatment should be provided on the site as required by both City and State requirements (current City of Portland requirements are more stringent than state requirements as they relate to triggers for stormwater treatment systems being required) as well as minimizing the amount of runoff from the site that drains directly into Capisic Brook should also be minimized. These stormwater treatment systems could include Low Impact Development measures, such as a vegetated roof on a portion of the building addition and bioretention areas to collect runoff from the parking area and hard court on the east side of the building. Conversations with Stormwater Management representatives from the City of Portland have indicated that there is a high degree of likelihood that the City will be implementing a stormwater fee system for impervious surfaces on a site. Any stormwater treatment provided on the site will likely offset a portion of this fee.

Site Elements and Fire Department Access

Dumpsters are recommended to be placed in an enclosure near the receiving area (the location of the receiving area varies between the two options). A storage shed should also be provided that could be used to house exterior and gasoline-powered equipment, such as snow blowers and small lawn mowers.

Fire Department access will be required on the rear (west) side of the building. To accomplish this, the pedestrian walkway from Godfrey and Purchas Street could be widened to accommodate a fire truck and a drive leading onto the site added at the end of Purchas Street. Both of these locations should be secured at the property line with lockable gates to prevent unauthorized vehicles from using them. Conversations with the Portland Fire Department have indicated having a fire department access road that exits the site and re-enters it in another area is acceptable.

Receiving Area and Fire Department Access - Option A

In Option A, the receiving area would be located on the northeast corner of the building and would be accessed via the bus loop. It is anticipated that deliveries and trash removal would not occur when buses are present in the bus loop.

On site, the pedestrian walkway from Godfrey and Purchas Street would double as a fire department access road and be connected to the southern side of the parking area.

Receiving Area and Fire Department Access - Option B

In Option B, the receiving area would be located on the southwest side of the building. It would be accessed via an extension of Purchas Street that would also provide the Fire Department access to the rear (west) side of the building.

On site, the pedestrian walkway from Godfrey and Purchas Street would double as a fire department access road and be extended to connect to the site exit.

Fred P. Hall Elementary School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY OPTION A									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
Art	1		915			915			Art	1		1310			1310		
Music	1		1195			1195			Music	1		1315			1315		
Spanish	1		875			875			Spanish	1		750			750		
Computer	1		875			875											
Library	1		1625			1625			Library	1		2465			2465		
	1		250			250			Project Room	1		385			385		
	1		205			205											
	2		30			60											
									Gym	1		5715			5715		
Cafeteria/Gym	1		4215			4215			Locker Rooms	2		400			800		
Kitchen	1		1335			1335			PE Office	1		125			125		
	1		285			285			PE Storage	1		210			210		
	1		375			375			Rec Office/Storage	1		370			370		
	1		40			40			Cafeteria	1		2620			2620		
PE Office	1		90			90			Kitchen	1		1180			1180		
									Stage	1		970			970		
									Community Room	1		265			265		
Main Office	1		195			195			Main Office	1		850			850		
Principal	1		160			160			Principal	1		200			200		
Assistant Principal/Conference	1		255			255			Assistant Principal	1		180			180		
									Conference	1		390			390		
									Workroom	1		225			225		
									Files	1		270			270		
Teachers' Room	1		780			780											
									Workroom	1		580			580		
									Workroom	1		380			380		
Book Room	1		305			305			Book Room	1		280			280		
									Book Room	1		200			200		

Fred P. Hall Elementary School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY OPTION A									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
Social Worker	1		165			165			Social Worker	1		260			260		
Spurwink	1		90			90			Spurwink	1		90			90		
									Nurse	1		450			450		
									Volunteer Room	1		190			190		
CAPACITY								CAPACITY									
447								523									
TOTAL NET AREA (SF)								TOTAL NET AREA (SF)									
40845								53540									
Structure/Circulation/Mech/Utility								Structure/Circulation/Mech/Utility									
13191								26460									
TOTAL GROSS AREA (SF)								TOTAL GROSS AREA (SF)									
54036								80000									
GROSS SF PER STUDENT								GROSS SF PER STUDENT									
121								153									

Fred P. Hall Elementary School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY OPTION B									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
Art	1		915			915			Art	1		1420			1420		
Music	1		1195			1195			Music	1		1170			1170		
Spanish	1		875			875			Spanish	1		750			750		
Computer	1		875			875											
Library	1		1625			1625			Library	1		2450			2450		
	1		250			250			Project Room	1		390			390		
	1		205			205											
	2		30			60											
									Gym	1		5850			5850		
Cafeteria/Gym	1		4215			4215			Locker Rooms	2		480			960		
Kitchen	1		1335			1335			PE Office	1		150			150		
	1		285			285			PE Storage	1		275			275		
	1		375			375			Rec Office/Storage	1		340			340		
	1		40			40			Cafeteria	1		2680			2680		
PE Office	1		90			90			Kitchen	1		1090			1090		
									Stage	1		1030			1030		
Main Office	1		195			195			Main Office	1		740			740		
Principal	1		160			160			Principal	1		185			185		
Assistant Principal/Conference	1		255			255			Assistant Principal	1		185			185		
									Conference	1		350			350		
									Workroom	1		250			250		
									Files	1		330			330		
Teachers' Room	1		780			780			Teachers' Room	1		755			755		
									Workroom	1		500			500		
									Workroom	1		350			350		
Book Room	1		305			305			Book Room	1		200			200		

Fred P. Hall Elementary School

PROGRAM SPACE - EXISTING FACILITY								PROGRAM SPACE - PROPOSED FACILITY OPTION B									
Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity	Subject	# of Rooms	@	Room Size	sf	=	Area (sf)	# of Students per Room	Capacity
									Book Room	1		305			305		
Social Worker	1		165			165			Social Worker	1		220			220		
Spurwink	1		90			90			Spurwink	1		120			120		
									Nurse	1		560			560		
									Volunteer Room	1		110			110		
CAPACITY	447								CAPACITY	523							
TOTAL NET AREA (SF)	40845								TOTAL NET AREA (SF)	56165							
Structure/Circulation/Mech/Utility	13191								Structure/Circulation/Mech/Utility	23835							
TOTAL GROSS AREA (SF)	54036								TOTAL GROSS AREA (SF)	80000							
GROSS SF PER STUDENT	121								GROSS SF PER STUDENT	153							

Buildings for Our Future
Portland Public Schools
Elementary Schools, Grades PreK-5

Oak Point Associates

Fred P. Hall Elementary School
Project Budget

A NEW CONSTRUCTION

Renovation/Reconfiguration	\$ -
New Construction/Addition	\$13,200,000
Demolition	\$ 271,375
Built in Equipment	\$ 681,000
Site Development	\$ 2,892,120
Subtotal	\$17,044,495

B ADMINISTRATIVE COST & RESERVE

Temporary Classrooms	\$ 150,000
Advertising/Insurance/legal	\$ 65,000
Bid Contingency 5%	\$ 852,225
Construction Contingency 5%	\$ 852,225
Subtotal	\$ 1,919,450

C FEES AND SERVICES

Architect/Engineer	\$ 1,176,070
A/E Reimbursable	\$ 44,400
Commissioning	\$ 80,000
Environmental Permitting	\$ 62,900
Life Cycle Cost Analysis	\$ 10,000
Surveys/Soils/Testing	\$ 125,000
Clerk of the Works	\$ 147,000
Subtotal	\$ 1,645,370

D TOTAL PROJECT COST

\$20,609,315

PROJECT TIMELINE - RECOMMENDATION

FRED P. HALL ELEMENTARY SCHOOL

		State Funding	
2013	July	Concept Design	
	August		
	September		
	October		
	November		
	December		
2014	January		
	February		
	March		
	April		
	May		
	June		Referendum
	July	Design Development	
	August		
	September		
	October		
	November		
	December		
2015	January	Bid Documents	
	February		
	March	Bid	
	April		
	May	Contract	
	June		
	July	Construction	
	August		
	September		
	October		
	November		
	December		
2016	January		Construction
	February		
	March		
	April		
	May		
	June		
	July		
	August		
	September	Occupancy	
	October		
	November		
	December		

Project Budget and Phasing

Project Budget

Under the proposed recommendations, all five schools would receive the relevant improvements that would bring them into balance with the recently constructed and substantially renovated East End, Ocean Avenue, and Riverton Elementary Schools. Hall School would be new school construction and the renovations and additions at Longfellow, Lyseth, Presumpscot and Reiche would be significant, with program and life safety deficiencies being remedied, energy efficient building heating and electrical systems included, and site improvements being undertaken.

Since the State Department of Education has suggested that there is good potential for Hall School-- and even perhaps Longfellow—to appear on pending Major Capital Improvements Program (MCIP) protected funding lists, Oak Point has developed a budget scenario that assumes that the City will accept state funding on Hall and Longfellow, and move forward with a referendum that includes locally funding BFOF-proposed improvements at Lyseth, Presumpscot and Reiche. The combination of state and local funding fully realizes the goal at all five schools at a projected local cost that is below the budget goal of \$46 million.

The following budget sheet identifies the project cost at each of the schools as well as the locally funded portion of the overall project. The breakdown of each individual project indicates the construction cost of the recommendations described in the school project descriptions as well as associated costs for fees, services, contingencies and temporary classrooms that will be needed during construction at the Hall School.

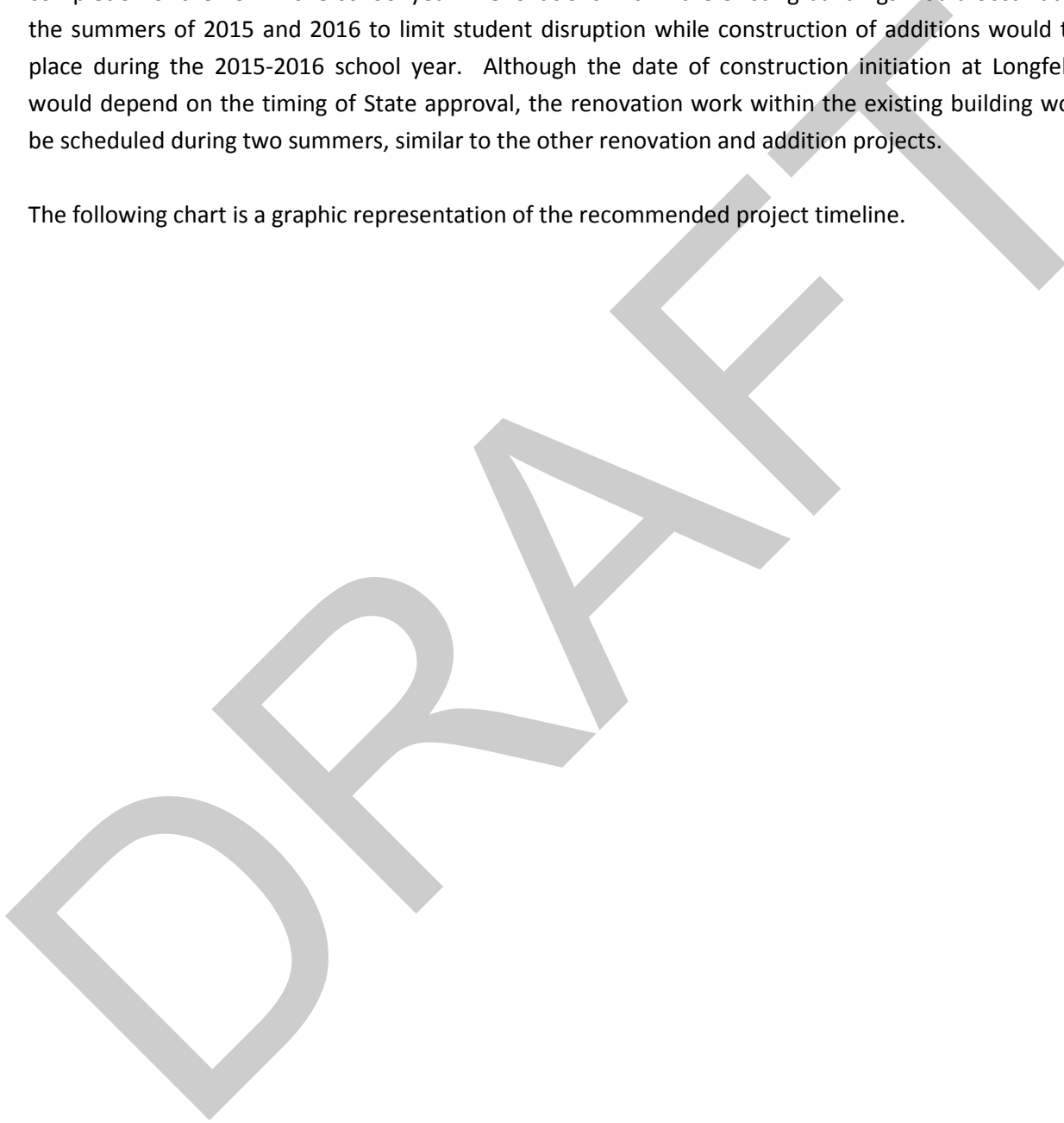
Project Phasing

The proposed timeline assumes that Hall School will be placed on the State's protected funding list in July 2013, and that Presumpscot, Lyseth and Reiche will receive funding approval in a November 2013 referendum. The start date for Longfellow will depend on when it is placed on the state's protected funding list, but the duration of the process would be similar to Hall School.

Concept design for the Hall school would begin immediately after placement on the State list and a referendum would be scheduled for June of 2014. Development of the construction documents would follow a successful voter approval and would be ready for contractor bids in the spring of 2015. The anticipated construction period would begin in June of 2015 and continue through the 2015-2016 school year and the following summer. The building would be ready for occupancy in time for the 2016-2017 school year.

Renovation and addition projects at Lyseth, Presumpscot and Reiche would begin with Portland Public Schools conducting site studies and selecting an architect prior to a November 2013 referendum. Concept design and development of the construction documents would follow a successful voter approval and would be ready for contractor bids in the December 2014. A signed construction contract in February 2015 would allow for material approval and delivery prior to the start of construction at the completion of the 2014-2015 school year. Renovations within the existing buildings would occur during the summers of 2015 and 2016 to limit student disruption while construction of additions would take place during the 2015-2016 school year. Although the date of construction initiation at Longfellow would depend on the timing of State approval, the renovation work within the existing building would be scheduled during two summers, similar to the other renovation and addition projects.

The following chart is a graphic representation of the recommended project timeline.



Buildings for Our Future

Portland Public Schools
Elementary Schools, Grades PreK-5

Recommendation

Implementation of the "facility equity model" with energy and sustainability upgrades, outdoor curriculum enhancements and building and site specific improvements at each school. State funding of Hall and Longfellow. Local funding of Lyseth, Presumpscot and Reiche.

Oak Point Associates

	Hall	Longfellow	Lyseth	Presumpscot	Reiche	Total
A NEW CONSTRUCTION						
Renovation/Reconfiguration	\$ -	\$ 4,961,738	\$ 3,606,210	\$ 2,270,177	\$ 7,838,031	\$ 13,714,419
New Construction/Addition	\$ 13,200,000	\$ 2,740,210	\$ 6,556,436	\$ 6,359,460	\$ 1,047,580	\$ 13,963,476
Demolition	\$ 271,375	\$ -	\$ 51,500	\$ -	\$ -	\$ 51,500
Built in Equipment	\$ 681,000	\$ 593,000	\$ 546,000	\$ 484,000	\$ 408,000	\$ 1,438,000
Site Development	\$ 2,892,120	\$ 962,400	\$ 1,997,640	\$ 1,118,640	\$ 682,320	
Subtotal	\$ 17,044,495	\$ 9,257,348	\$ 12,757,786	\$ 10,232,277	\$ 9,975,931	\$ 32,965,995
B ADMINISTRATIVE COST & RESERVE						
Temporary Classrooms	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -
Advertising/Insurance/legal	\$ 65,000	\$ 55,000	\$ 55,000	\$ 55,000	\$ 55,000	\$ 165,000
Bid Contingency 5%	\$ 852,225	\$ 462,867	\$ 637,889	\$ 511,614	\$ 498,797	\$ 1,648,300
Construction Contingency 5%	\$ 852,225	\$ 462,867	\$ 637,889	\$ 511,614	\$ 498,797	\$ 1,648,300
Subtotal	\$ 1,919,450	\$ 980,734	\$ 1,330,778	\$ 1,078,228	\$ 1,052,594	\$ 3,461,600
C FEES AND SERVICES						
Architect/Engineer	\$ 1,176,070	\$ 781,315	\$ 983,200	\$ 783,246	\$ 904,242	\$ 2,670,688
A/E Reimbursable	\$ 44,400	\$ 39,400	\$ 39,400	\$ 39,400	\$ 39,400	\$ 118,200
Commissioning	\$ 80,000	\$ 56,762	\$ 71,364	\$ 56,878	\$ 74,578	\$ 202,820
Environmental Permitting	\$ 62,900	\$ 18,760	\$ 27,532	\$ 18,760	\$ 18,760	\$ 65,052
Life Cycle Cost Analysis	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 30,000
Surveys/Soils/Testing	\$ 125,000	\$ 39,500	\$ 45,500	\$ 45,500	\$ 34,500	\$ 125,500
Clerk of the Works	\$ 147,000	\$ 73,500	\$ 73,500	\$ 73,500	\$ 73,500	\$ 220,500
Subtotal	\$ 1,645,370	\$ 1,019,237	\$ 1,250,496	\$ 1,027,284	\$ 1,154,980	\$ 3,432,760
	STATE FUNDED		LOCALLY FUNDED			
D TOTAL PROJECT COST	\$ 20,609,315	\$ 11,257,319	\$ 15,339,060	\$ 12,337,789	\$ 12,183,505	\$ 39,860,355

		PROJECT TIMELINE - RECOMMENDATION				
		HALL	LONGFELLOW	LYSETH	PRESUMPCOT	REICHE
		State Funding	State Funding	Local Funding	Local Funding	Local Funding
2013	J	Concept Design		Site Studies	Site Studies	Site Studies
	A			Select Architect	Select Architect	Select Architect
	S			Referendum	Referendum	Referendum
	O			Concept Design	Concept Design	Concept Design
	N					
D	Design Development	Design Development	Design Development			
J						
2014	F	Referendum	Concept Design	Concept Design	Concept Design	
	M					
	A	Design Development	Concept Design	Bid Documents	Bid Documents	
	M					
	J					
J	Bid Documents	Concept Design	Bid	Bid	Bid	
A						
S	Contract	Material Approval & Delivery	Material Approval & Delivery	Material Approval & Delivery		
O						
2015	N	Construction	Referendum	Construction (Renovation)	Construction (Renovation)	Construction (Renovation)
	D		Design Development	Construction (Addition)	Construction (Addition)	Construction (Addition)
	J		Bid Documents			
	F		Bid	Construction (Renovation)	Construction (Renovation)	Construction (Renovation)
	M		Contract			
2016	A	Occupancy	Construction (Addition)	Occupancy	Occupancy	Occupancy
	M					
	J					
	J					
	A					
2017	S	Construction (Renovation)	Occupancy			
	O					
	N					
	D					
	J					

School Capacity

Introduction

As part of the *Buildings for Our Future* project, Oak Point Associates was tasked with developing recommendations to improve short- and long-term capacity issues at Portland's mainland elementary schools, in concert with proposed renovation and new construction concepts at Presumpscot, Reiche, Longfellow, Lyseth, and Hall Schools. Capacity is a function of the building size, configuration, and established acceptable class sizes, but is directly related to enrollment trends and school district boundaries.

The current Portland Public Schools elementary school boundaries were most recently revised in February 2008, to adjust for the opening of Ocean Avenue Elementary School. The most recent set of enrollment projections at the start of the project were done in 2009 by the New England School Development Council (NESDC).

In order to evaluate the impact of potential boundary shifts in the most informed way possible, Oak Point sub-contracted Davis Demographics & Planning (DDP) to provide updated six-year enrollment projection scenarios, as well as Geographic Information Systems (GIS)-based demographic mapping tools that would allow a comprehensive analysis of how school district boundary shifts would potentially affect enrollment, transportation, and the demographic makeup of the student body.

The primary goal of the long-term recommendations was to develop district boundaries that would provide the best fit between student enrollment and the planned capacity of each school, assuming that the renovation and new construction concepts proposed by Oak Point as part of the *Buildings for Our Future* project go forward. The secondary goal was to support the idea of neighborhood elementary schools in the way that district lines are drawn, with sensitivity toward demographics and walk-ability.

Because of a sharp increase in 2012/2013 kindergarten enrollment at the Ocean Avenue Elementary School (OAES), Oak Point was also asked to develop short-term kindergarten capacity recommendations in case kindergarten enrollment numbers at OAES are similar in 2013/2014. The recommendations that Oak Point developed and reviewed with the SCTF and PPS specifically relate to building capacities, and are in addition to any staffing or program changes that PPS addresses independently. Ideally, the short-term recommendations are a subset of the long-term recommendations.

A School Capacity Task Force (SCTF) was also formed, comprised of citizen stakeholders from all mainland elementary school districts, to provide Oak Point Associates with input and feedback on the recommendations developed.

Existing Capacity and Enrollment

As stated in the 2009 NESDC *Long-Range School Facilities Planning* report, school capacity is “directly related to the changing nature of the school’s educational program” (p. 6). Because of the fact that 21st century educational programming requires a lot of small group space that was not desired when these elementary schools were constructed, spaces within the building are generally not optimized. For the Buildings for Our Future project, the existing capacity of each school was calculated in a similar way to how the NESDC report calculated Current Operating Capacity-- by counting the number of grade-level classrooms currently present at each school during the 2012/2013 school year (including portables, where applicable), and calculating the maximum number of students that would be allowed utilizing PPS’ class size maximums for each grade as follows:

Grade	Max. # of students
Pre-K	15
K	18
1-2	20
3-5	23

Calculations resulted in the following capacities for the five elementary schools (for more detail, see the space summary charts included in the individual school project sections):

School	Capacity
Longfellow	396
Lyseth	502
Presumpscot	315
Reiche	373
Hall	447

When the current capacities of the Riverton (449), East End (477) and Ocean Avenue Elementary Schools (437) are included, a total mainland elementary school capacity of **3,396** is derived. A comparison of this capacity vs. 2012/2013 actual enrollment is as follows:

Actual Enrollment vs. Capacity			
School	Capacity	2012/2013 Enrollment*	Difference
Longfellow	396	404	-8
Lyseth	502	517	-15
Presumpscot	315	276	+39
Reiche	373	376	-3
Hall	447	430	+17
Riverton	449	443	+6
East End	477	437	+40
Ocean Avenue	437	446	-9
Total	3,396	3,329	+67

Note 1

Note 2

Enrollment on 1/9/13 (PreK-Grade 5)

Note 1: Enrollment at Lyseth includes 15 ISP students. Specialized classrooms were not used in calculating the building capacity.

Note 2: Four classrooms at Riverton are currently used for Adult Education. Capacity could increase by 72-92 students depending on grade levels assigned to those spaces.

The current enrollment suggests that there is adequate capacity district-wide for elementary schools, however there are schools that are experiencing overcrowding (Lyseth, Ocean Avenue, Longfellow) and others that appear to have excess space (East End, Hall, Presumpscot, Riverton).

As part of the enrollment analysis, Davis Demographics developed a Student Transfer Matrix (see below) indicating how many elementary students in Portland attend a school that is out of their neighborhood district. Portland Public Schools allows elementary aged students to attend an out-of-district school upon request, provided that the school has capacity. The percentage of students who attend a school “out of district” varied from 21 percent at Ocean Avenue Elementary School to (OAES) 5 percent at Lyseth Elementary School, with an average of 12 percent across the city, including island schools.

		School of Attendance											
		East End Community	Hall ES	Longfellow ES	Lyseth ES	Ocean Ave ES	Peaks Island ES	Presumpscot ES	Reiche Community	Riverton ES	Cliff Island	Residence	% Attending
School of Residence	East End Community	358	2	2	9	10	0	2	6	10	0	399	90%
	Hall ES	9	374	20	9	1	0	1	0	9	0	423	88%
	Longfellow ES	4	13	318	8	10	0	1	4	4	0	362	88%
	Lyseth ES	2	4	4	440	7	0	1	1	6	0	465	95%
	Ocean Ave ES	14	21	27	11	387	0	7	17	7	0	491	79%
	Peaks Island ES	0	0	0	0	0	62	0	0	0	4	66	94%
	Presumpscot ES	5	4	5	21	2	0	265	0	5	0	307	86%
	Reiche Community	10	3	3	3	12	0	1	319	13	0	364	88%
	Riverton ES	7	16	5	20	17	0	3	9	371	0	448	83%
	Out of District	1	2	1	2	3	0	2	2	0	0	13	
Unmatched	0	1	0	1	0	0	0	1	0	0	3		
Total Attendance		410	440	385	524	449	62	283	359	425	4	3,341	Total 2012/13 K-5
Transfer Students		52	66	67	84	62	0	18	40	54	4	447	
% of Total		13%	15%	17%	16%	14%	0%	6%	11%	13%	100%	13%	

Elementary School Student Transfer Matrix (Source: DDP)

Some schools might not be over capacity if out-of-district placement was not allowed. Lyseth, for example, has the highest number of students transferring in (84) and the smallest mainland number of students transferring out (25). Conversely, other schools might have much less excess capacity if out-of-district placement was discontinued (Presumpscot, for example).

When the capacity and enrollment numbers are reconfigured by residence, and not by actual enrollment, the capacity vs. potential enrollment for the 2012/2013 school year is as follows:

Residence-Based Enrollment vs. Capacity			
School	Capacity	2012/2013 Enrollment*	Difference
Longfellow	396	380	+16
Lyseth	502	464	+38
Presumpscot	315	307	+8
Reiche	373	364	+9
Hall	447	423	+24
Riverton	449	484	-35
East End	477	416	+61
Ocean Avenue	437	491	-54
Total	3,396	3,329	+67

Note 1

Enrollment on 1/9/13 (PreK-Grade 5)

Note 1: Out-of-district ISP students are not included in this enrollment figure (they are included within their neighborhood school figures).

With residence-based enrollment, OAES and Riverton clearly have the potential for overcrowding. When OAES opened in 2011, and the OAES district lines were drawn, children who were already attending another elementary school had the option of staying at that school rather than to switch to OAES. The fact that the younger grades at OAES are experiencing much greater enrollment than the older grades (and the high transfer rate of 21 percent at OAES) may be partly because of the “grandfathered” students who chose not to switch in 2011. As those students matriculate into middle school, it’s expected that OAES will face greater capacity challenges.

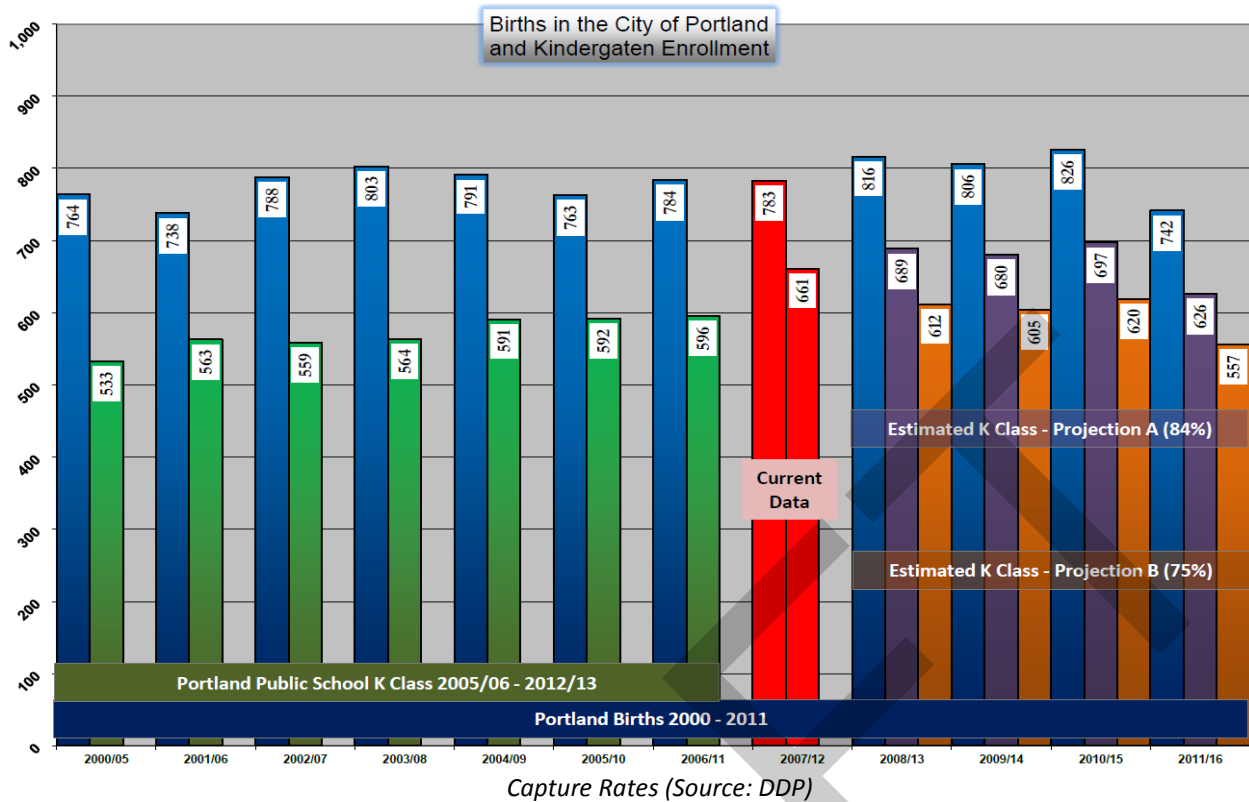
Enrollment Projections

DDP developed six-year, residence-based enrollment projections (Fall 2013/14- Fall 2019/20) utilizing four-year historical student data coupled with Maine State Department of Health Live Birth data for the City of Portland from 2000-2011 (refer to Student Population Projections in Appendix F). The historical student data was used to create “mobility factors”, or whether the population at each school was increasing, declining or staying stable within each grade (see below).

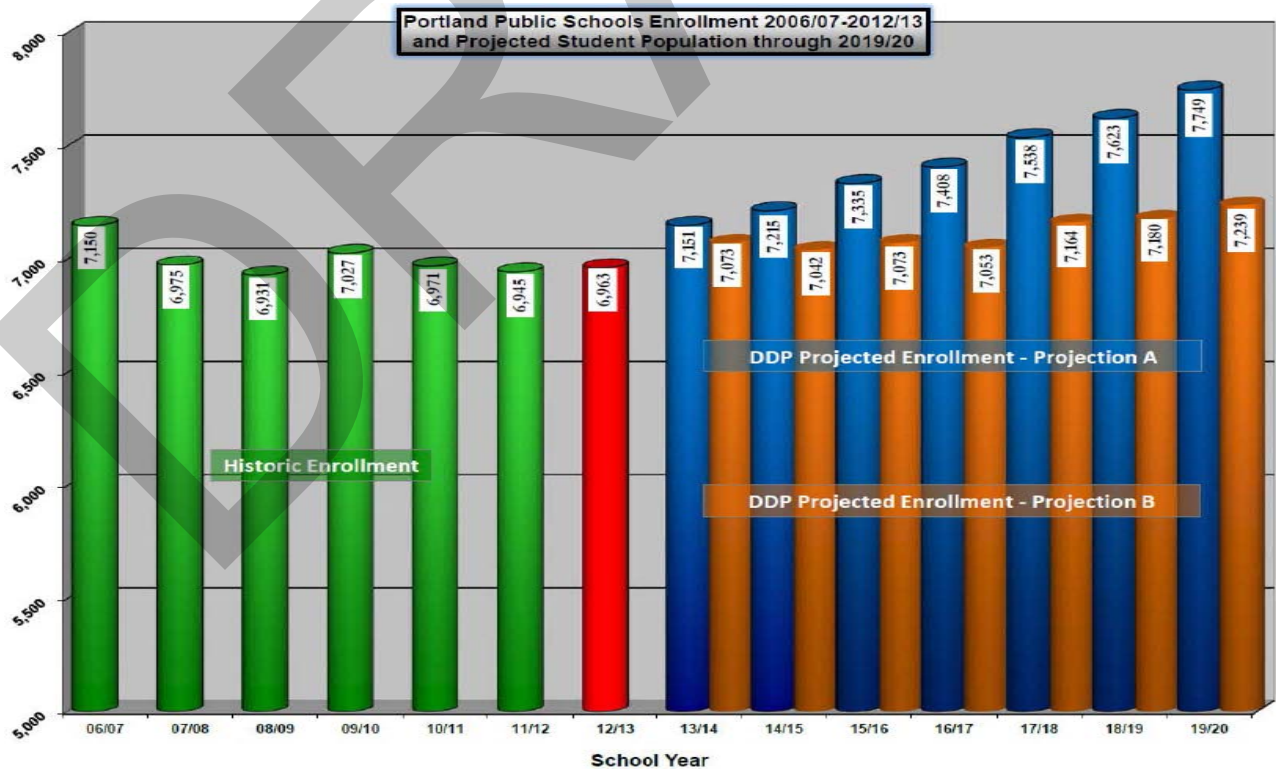
Mobility by Elementary Attendance Area 2009/10 - 2012/13												
	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12
East End Community	0.932	0.990	1.031	0.978	0.951	1.000	1.026	0.994	1.088	1.108	0.929	1.092
Hall ES	0.958	1.019	0.981	1.025	1.020	1.000	0.995	0.965	0.990	0.980	1.034	1.022
Islands	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Longfellow ES	1.055	1.000	0.972	1.024	0.987	0.948	0.979	0.951	1.090	1.026	1.006	1.020
Lyseth ES	0.948	0.992	1.008	0.958	1.013	0.939	1.017	0.973	0.917	1.011	1.047	1.059
Ocean ES	0.956	0.978	1.004	0.972	1.039	0.976	1.059	0.995	1.020	1.034	1.000	1.032
Presumpscot ES	0.924	0.948	0.922	1.007	0.976	1.000	1.021	1.027	1.007	1.063	0.970	0.978
Reiche ES	1.040	0.988	1.021	1.099	1.052	1.043	1.057	0.978	1.096	1.165	0.981	1.154
Riverton ES	0.873	0.982	0.962	0.947	0.964	0.923	0.976	1.036	1.027	1.044	1.016	1.113

Mobility Factors by Residence (Source: DDP)

The live birth data was compared with actual school enrollment five years later, to determine the “capture rate”, city-wide, that allows DDP to predict the incoming kindergarten population. What DDP found was that from fall 2005- fall 2012, the capture rate was very stable, 73 percent on average. In 2012/2013, however, the capture rate jumped to 84 percent. This means that the kindergarten population in 2012/2013 (661 students) is 84 percent of the live birth number for the year 2008 (783 children). What can’t be predicted is whether, in future years, the capture rate will go back down to the low 70 percent- range, or whether it will stay higher. An assumption either way yields very different enrollment projection scenarios.



Because of this, DDP developed two sets of enrollment projections: Projection “A” and Projection “B”. The difference in enrollment (K-12) is an increase of 785 students over the next six years (Projection “A”), or an increase of 276 students (Projection “B”). The K-5 projections are an increase of 426 students in Projection “A”, or a decrease of 12 students in Projection “B”.



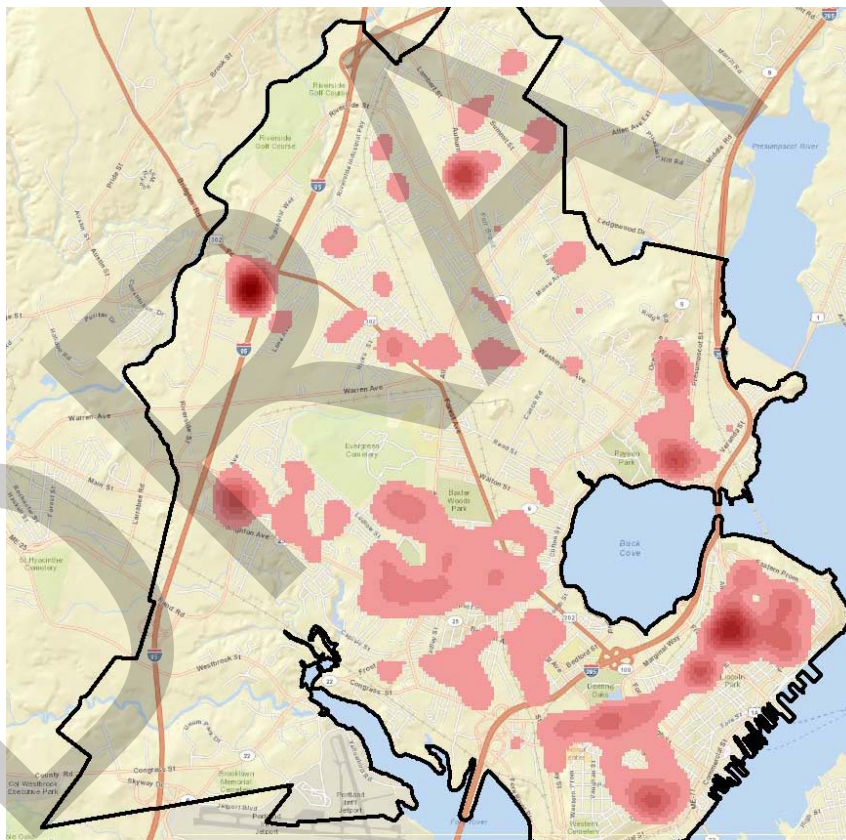
Enrollment Projections (Source: DDP)

In order to provide a more granular set of enrollment projections, DDP created projections at the detail of an individual study area. For this analysis, DDP created 290 study areas within mainland Portland (refer to Study Area Map on the next page). Boundary lines generally correlated with existing school district boundaries, major vehicular routes, and geographic features.

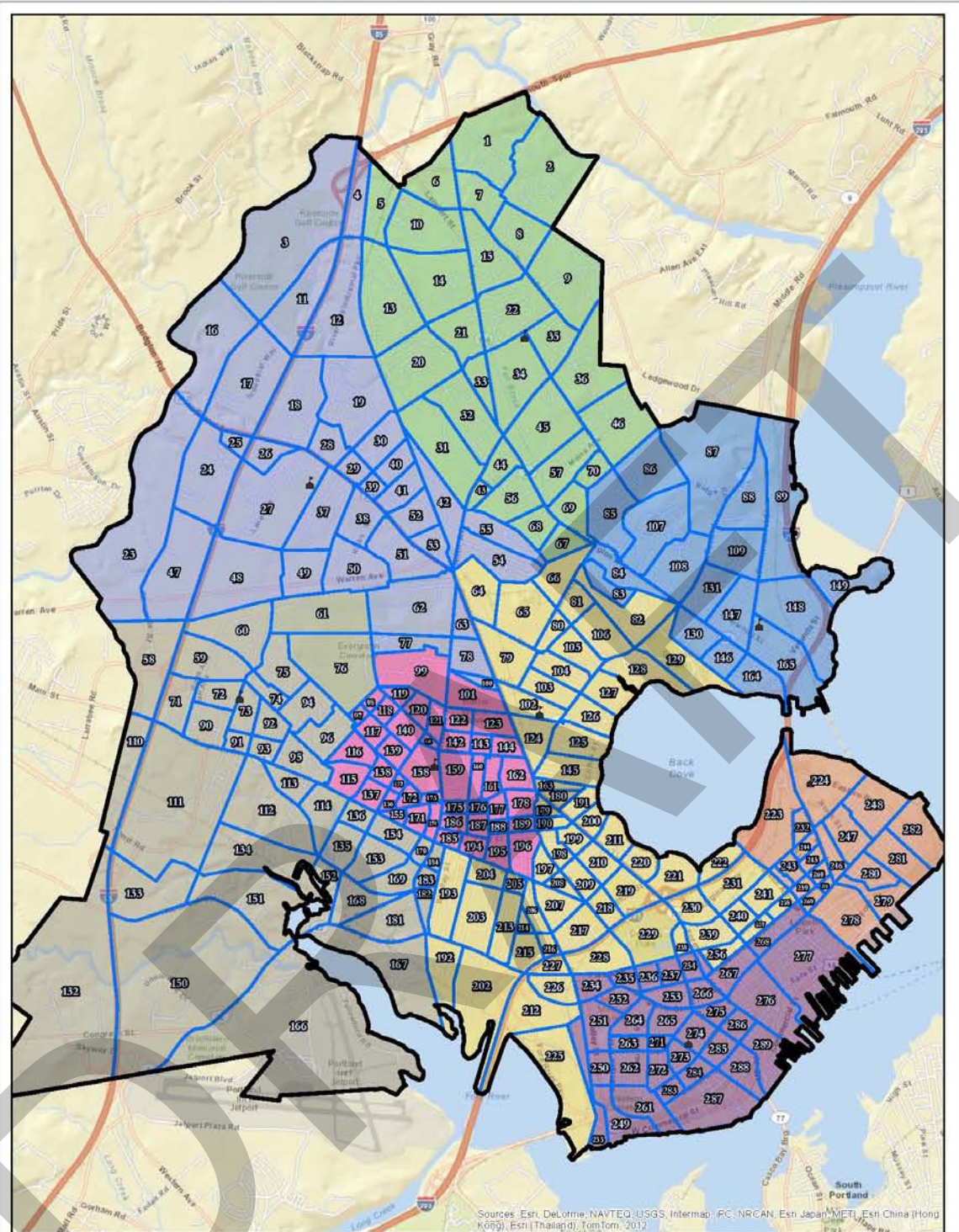
The full Student Population Projections are included in Appendix F.

Analysis of Available Data

Utilizing non-identifiable student information data provided by Portland Public Schools (identifying each student only by a unique Student ID number), Davis Demographics and Planning created base GIS maps for use in understanding the demographic makeup of the city. This mapping enabled a comparison of school locations with a density map of where students live, as well as an understanding of the geographic pattern of language proficiencies, free and reduced lunch status as well as walkability for students at each of the eight mainland schools. This resulted in a qualitative analysis of boundary shifts that were being proposed, in addition to the quantitative capacity analysis.



K-12 Student Density Map (DDP)



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2012

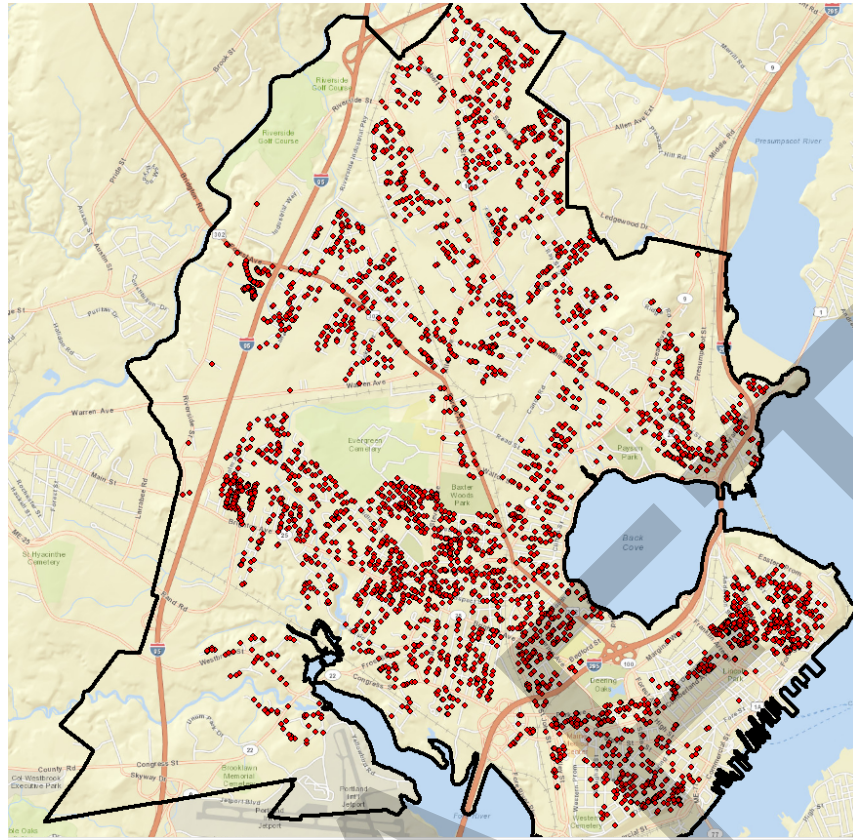
0 0.25 0.5 1
Miles

Portland Public Schools

Study Areas

ddp Davis Demographics & Planning

Study Area Map (Source: DDP)



K-12 Student Location Map (DDP)

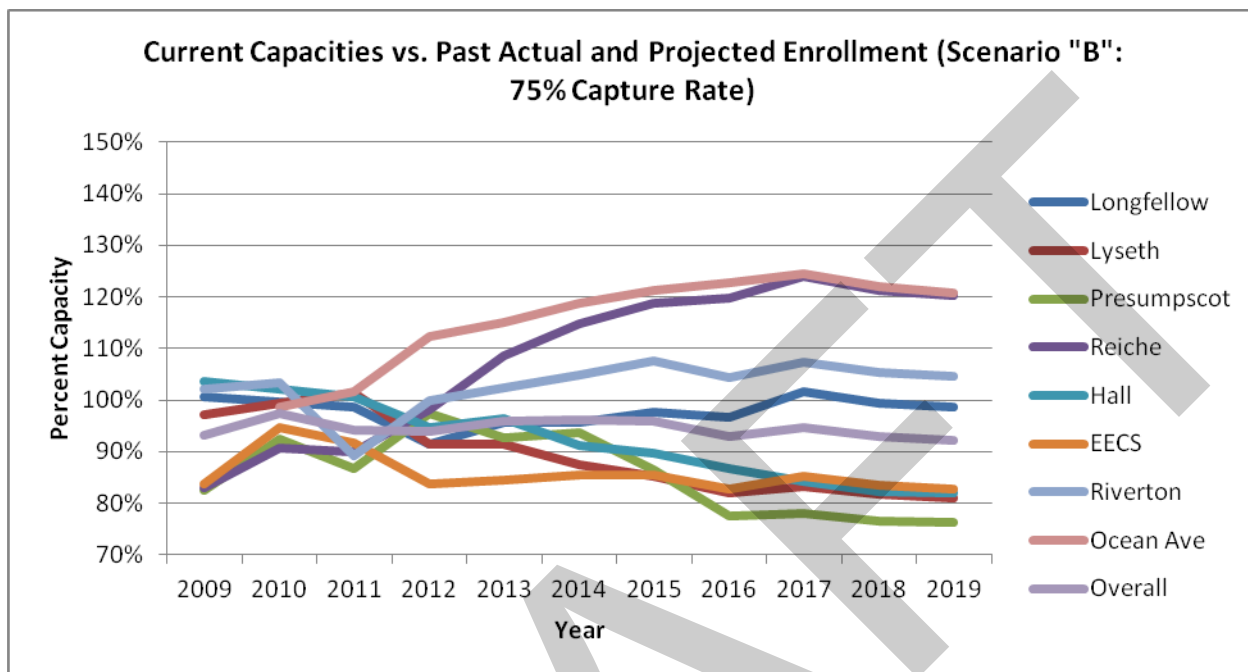
Long-Term Recommendations

Utilizing their proprietary *SchoolSite* software, DDP developed a GIS model of the elementary school enrollment districts, creating layers for some of the student data fields contained within a student's unique identification number for 2012/2013. Although there are several data fields, the ones that Oak Point Associates and the SCTF focused on were: street address, school attending, school district, free/reduced lunch, and limited English language proficiency (LEP). The importance of these factors is as follows:

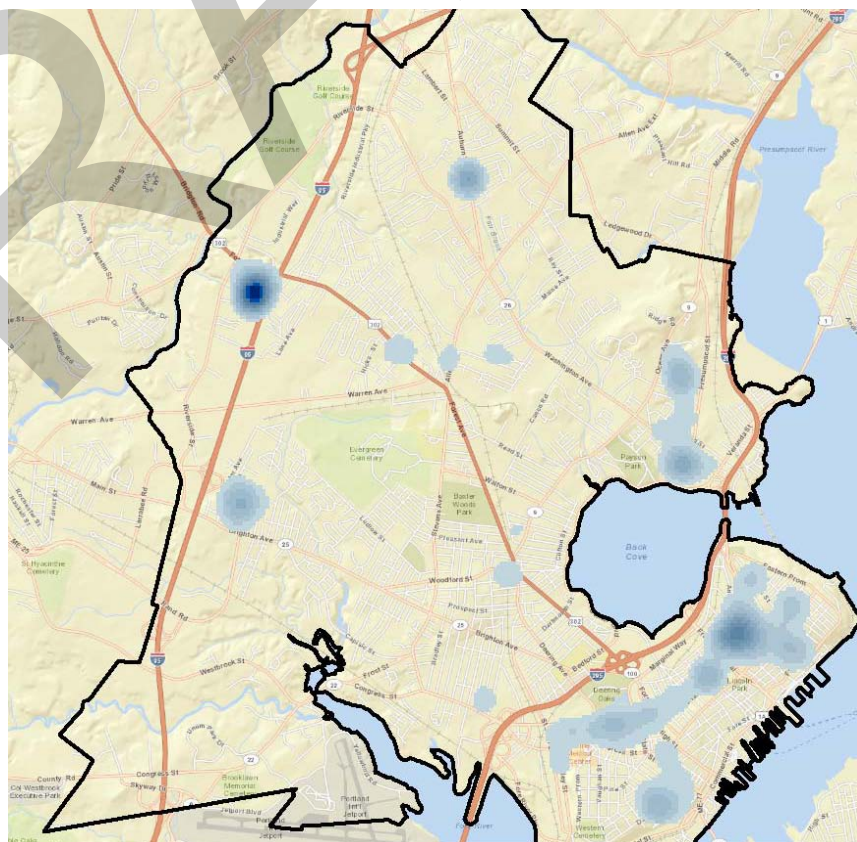
- Address: Indicates density of student population, and proximity to the district school and ability to walk to their neighborhood school.
- School Attending/School District: Gives an idea of how many students in a study area attend out of district.
- Free/Reduced Lunch: Affects a school's ability to receive Title One funding, and generally correlates to a greater need for resources as the level of poverty rises.
- LEP: Correlates to the greater resource needs of non-English language proficient students.

Several "scenarios" were developed where K-5 district boundary lines were adjusted to attempt to create overall "best fit" between school capacity and enrollment, and the less conservative enrollment Projection "B" was used for this exercise.

Generally speaking, Reiche and Ocean Avenue were chronically over capacity; Presumpscot, Hall, Lyseth and East End were under capacity on a declining enrollment trend; and Riverton and Longfellow were stable.



In shifting boundary lines in the draft scenarios, the group looked at how the percentages of free/reduced lunch, limited English language proficiency, and students eligible for busing would change as a result of boundary shifts. Major vehicular roads and geographical features (parks, industrial areas, railroad tracks, wetlands, etc.) were also assessed in shifting boundaries, to try to improve walk-ability where possible. Student density relative to existing school locations was also assessed (refer to K-12 Student Free and Reduced Lunch Density Map).



K-12 Student Free and Reduced Lunch Density Map (DDP)

What became clear as a result of this exercise is that, because of limited physical expansion potential at East End and Reiche Schools, peninsula schools could not contain population growth without additional burden on Ocean Avenue Elementary School (OAES), whose district is adjacent to both peninsula schools. In order to offset this burden, schools adjacent to the OAES district with excess capacity (Hall and Presumpscot) would need to shift boundaries.

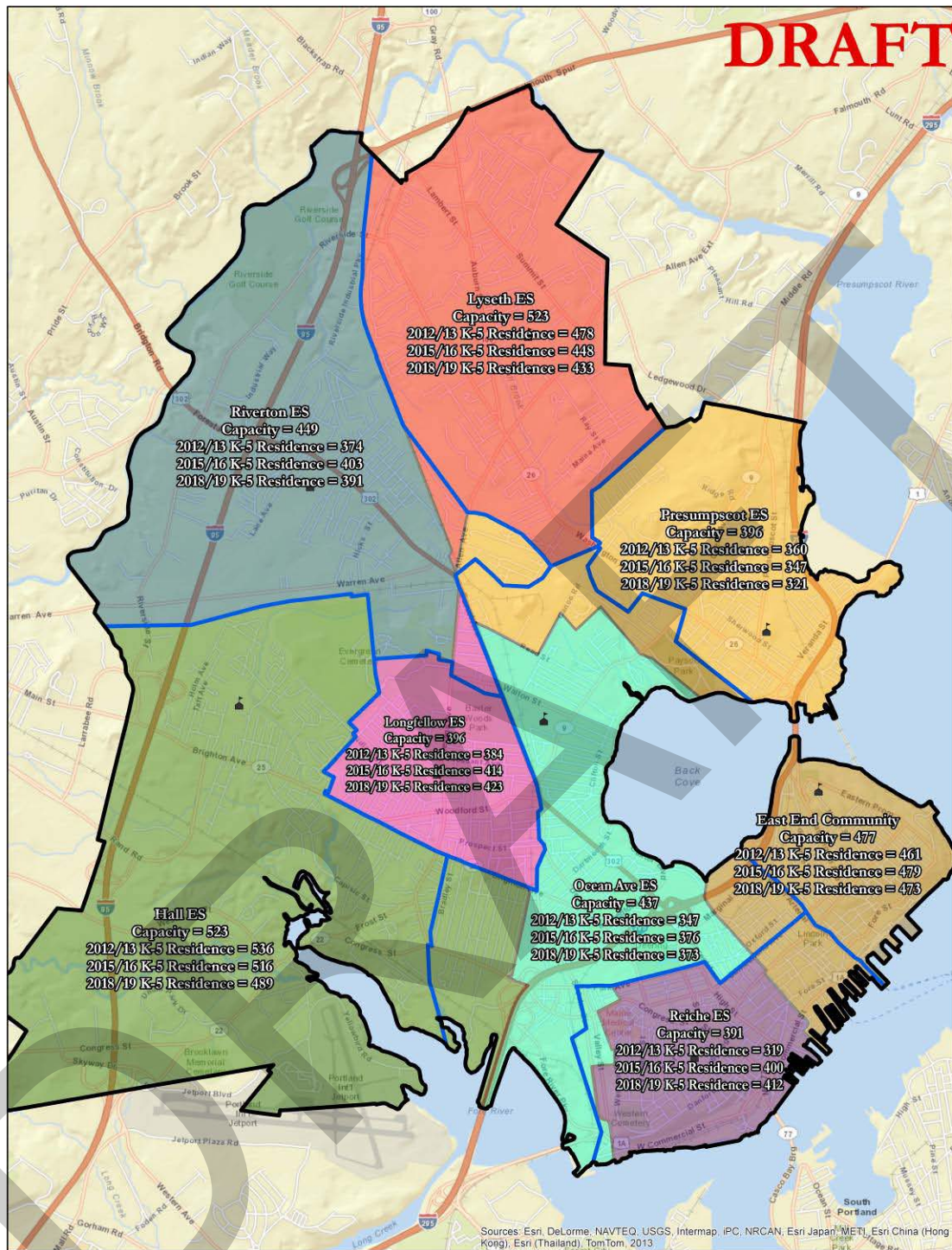
There was a lot of support at the task force level for trying to get a more even distribution of percentages of free/reduced lunch and LEP students across all elementary schools. However, we found that the geographic areas that would need to be redistricted in order to produce this equity tended to be in close proximity to the district's existing neighborhood elementary school, and the group agreed that moving these blocks of students in order to create better distribution would not make much sense.

Over the last few meetings with the SCTF, Oak Point presented and refined a long-term redistricting scenario, renaming the scenario with each subsequent revision (Scenario "A", "B", "C", etc.) arriving at a final proposed scenario (refer to Proposed Long-Term Elementary School District Map on the following page). This scenario makes shifts to all elementary school boundaries, some more significant than others. Even with the proposed boundary shifts, there are still school districts that are projected to be over capacity at certain peak years in the projected enrollment. The SCTF strongly advocated that over the long term, it should be understood and publicized within the Portland school system that district lines, particularly in border areas, remain flexible to accommodate shifts in population to maintain equity in school enrollment.

As part of a long term strategy, Portland Public Schools could also consider grade level configuration changes at elementary and middle schools in order to optimize the use of existing school buildings.

Prior to fully implementing the "Proposed Long-Term Elementary School District Map," the final *Buildings for Our Future* projects, Ocean Avenue Elementary School expansion, and district policies should be reviewed to verify assumptions made through this process are still accurate and that projected student populations are trending within acceptable ranges. Unexpected student enrollment shifts, new housing developments, or other notable changes can be incorporated into this map prior to implementation.

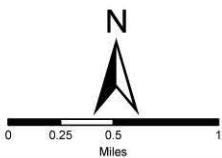
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Sources: Esri DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

Portland Public Schools

Proposed Long-Term Elementary School District Map



 Current ES Boundaries



Proposed Long-Term Elementary School District Map

Short-Term Recommendations

Three ideas for short-term kindergarten options at OAES were developed and presented to the SCTF at its April 8, 2013 meeting, as well as at an OAES PTO meeting on April 24, 2013:

1. There may be one to two classrooms available at Hall School in 2013/2014 with a capacity of 20-40 students, as a result of program changes. As part of the Proposed Long-Term Elementary School District Map, part of the neighborhood bounded by Bradley Street, Brighton Avenue, Congress Street and Douglass Street would be shifted from OAES to Hall School. The kindergarten and possibly 1st grade students from this neighborhood could be shifted to Hall School in 2013/2014.
2. With an adjustment in class sizes, one classroom may be available at EECS in 2013/2014. A small portion of the Bayside neighborhood that currently lies within the OAES district, but is geographically closer to EECS could be shifted so that incoming kindergarten students in one or two study areas would attend EECS in 2013/2014.
3. With an adjustment in class sizes, one classroom may be available at Presumpscot School in 2013/2014. A portion of the neighborhood adjacent to the Presumpscot School boundary that currently lies within the OAES district could be shifted so that incoming kindergarten students in that area would attend Presumpscot in 2013/2014. Due to a limited number of students along the district border, it is unlikely that a full class of students would be able to move from this area.

The SCTF generally responded favorably to the three short-term kindergarten options. The task force members however requested a clear enrollment process be developed by Portland Public Schools and the Portland Board of Public Education. The task force asked that the primary focus of this process be the following:

1. In the case of a family with multiple elementary-school-aged children, whose incoming kindergarten student is being asked to attend a different school, the family should be given options to keep siblings together. These options should include being able to allow the incoming kindergarten student to attend the school attended by the older siblings, or to allow older siblings to transfer to the new school.
2. Students impacted through the plan outlined above should not be asked to attend a different school in the future.
3. The final plan accepted by the school board should be communicated to the community and the families impacted as soon as possible. Continued outreach to the community should happen through the start of school.
4. The SCTF was concerned that there might not be bus transportation for students impacted by the short-term capacity adjustments. Bus transportation to either school should be provided to students in the neighborhood who are affected by short-term capacity transfers.

On June 25, 2013, the Portland Board of Public Education voted to reaffirm the elementary school boundaries that were approved in February 2008 as part of an Ocean Avenue Elementary School Site Neighborhood Boundary Ad Hoc Committee recommendation and to pursue the following measures to manage enrollment at Ocean Avenue School in the 2013-2014 school year:

- Cap OAES enrollment from the area between Preble Street and Franklin Street and between Marginal Way and Commercial Street to families of children who have attended through the 2012-2013 school year. Children of families in this area who register after the Board's vote would attend East End Community School.
- Provide more resources for East End Community School based on students' needs.

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District Programs

Five stand-alone Portland Public Schools programs that require additional space or are currently located in multiple facilities were identified. The *Buildings for Our Future* initiative sought to find space to relocate these programs, either in existing space re-purposed for these programs or additions programmed for their specific needs. The programs identified are:

- **Casco Bay High School (CBHS)** shares space in the Portland Arts and Technology High School (PATHS), has an expeditionary learning curriculum, and is looking to expand its enrollment but is unable to because of space constraints.
- The **Multilingual and Multicultural Center** is located within Lyman Moore Middle School, desires more space in which to conduct its work, and feels that a location at a peninsula school might be a better fit.
- **Portland Adult Education (PAE)** is located at the Riverton Elementary School and (prior to closure) the West School. PAE would like a space of its own in which to conduct its classes.
- **Student Support Services** was located within the West School prior to closure of that facility. In February 2013 this program was relocated to the former Cathedral School. The program struggles with a need for more space, needs visual and acoustical separation within many of its spaces, and has unique technology and equipment needs.
- The **Central Office** for Portland Public Schools is located on the third floor of the Portland Arts and Technology High School (PATHS), after being relocated from Martin's Point in 2005. It occupies prime educational real estate that could be used for CBHS expansion.

Interviews with the staff of these programs were completed in December 2012. Interview notes and preliminary program requests are included in Appendix C.

Early in the project it became clear that, for a number of reasons, space did not exist at any of the five elementary schools under review that could house these programs.

Outside of the elementary schools in the BFOF project, the district identified the former Reed School (which currently houses PPS Food Service Department's Central Kitchen, but will be vacant when the construction of a new Central Kitchen facility is completed) as a possible location for a relocated Central Office. A rough space requirement for Central Office was produced which would fit within the Reed School and a preliminary budget was developed showing the necessary renovation measures to convert the kitchen space into office space. Because of the estimated construction cost and limited available funding, this option was not pursued further.

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