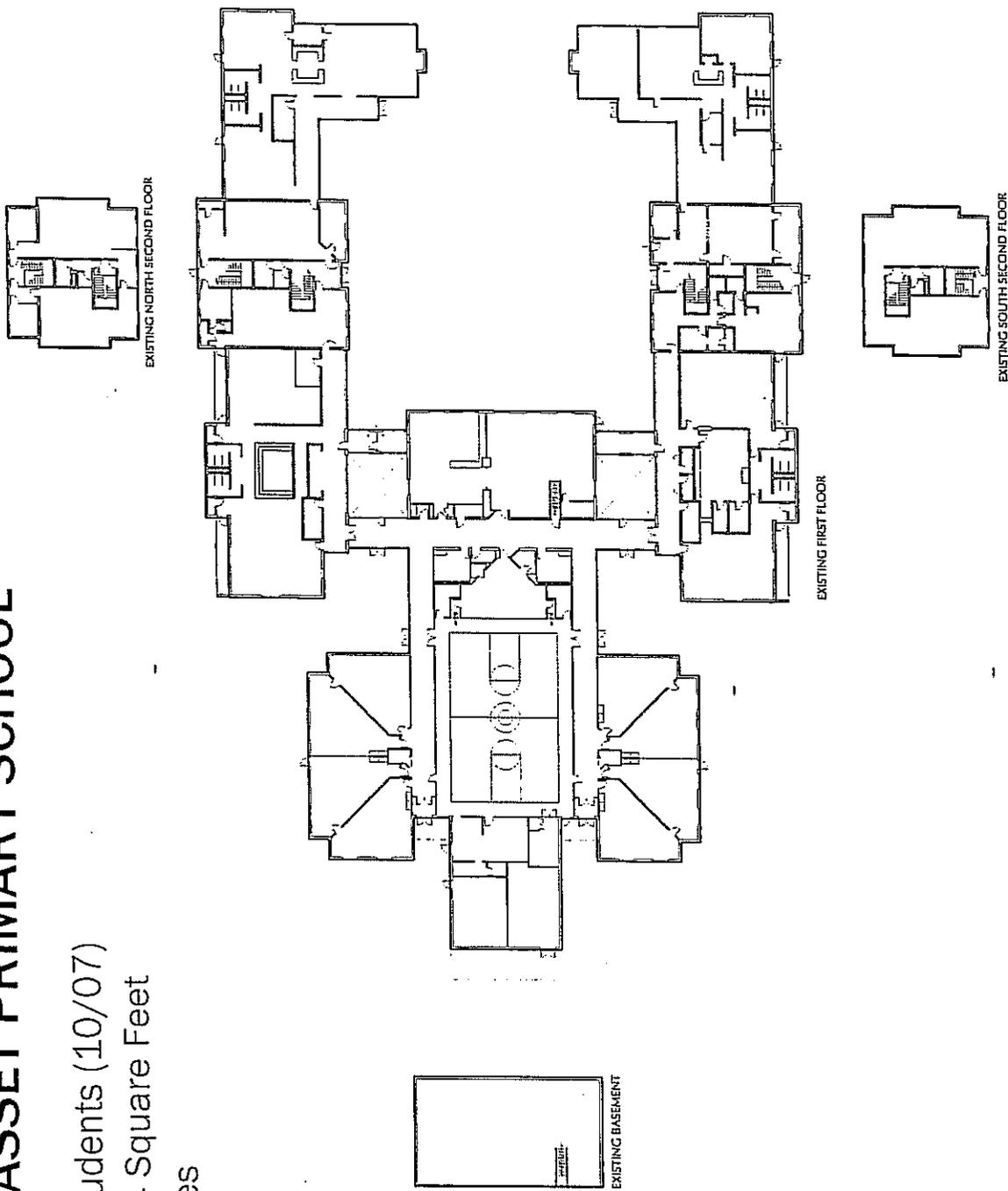

WISCASSET SCHOOLS
STUDY

Stephen Blatt
Architects

- OCTOBER 2007 -

WISCASSET PRIMARY SCHOOL

298 Students (10/07)
55,134 Square Feet
32 Acres

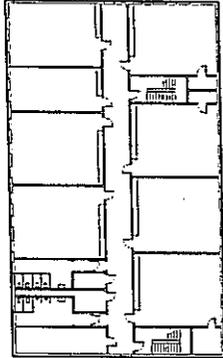


WISCASSET MIDDLE SCHOOL

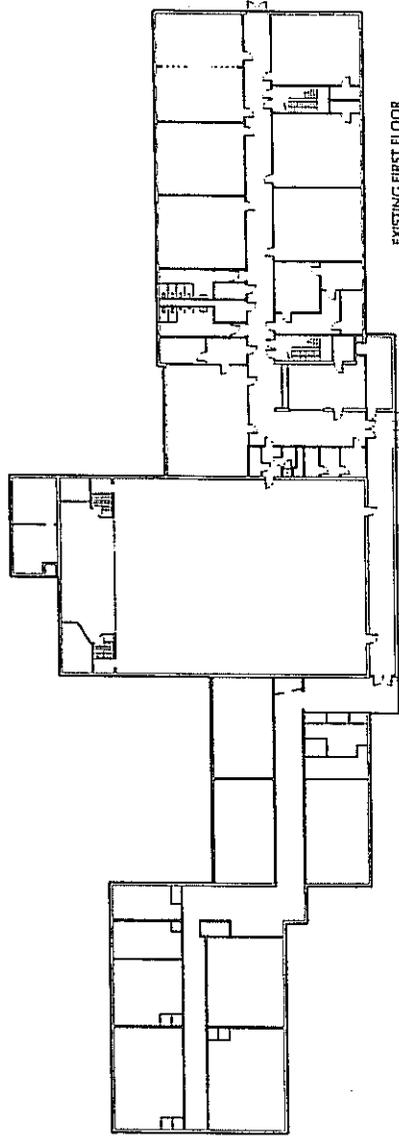
213 Students (10/07)

54,300 Square Feet

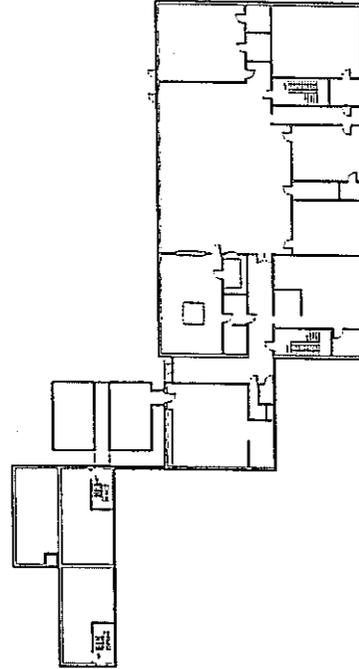
9 Acres



EXISTING SECOND FLOOR



EXISTING FIRST FLOOR



EXISTING BASEMENT

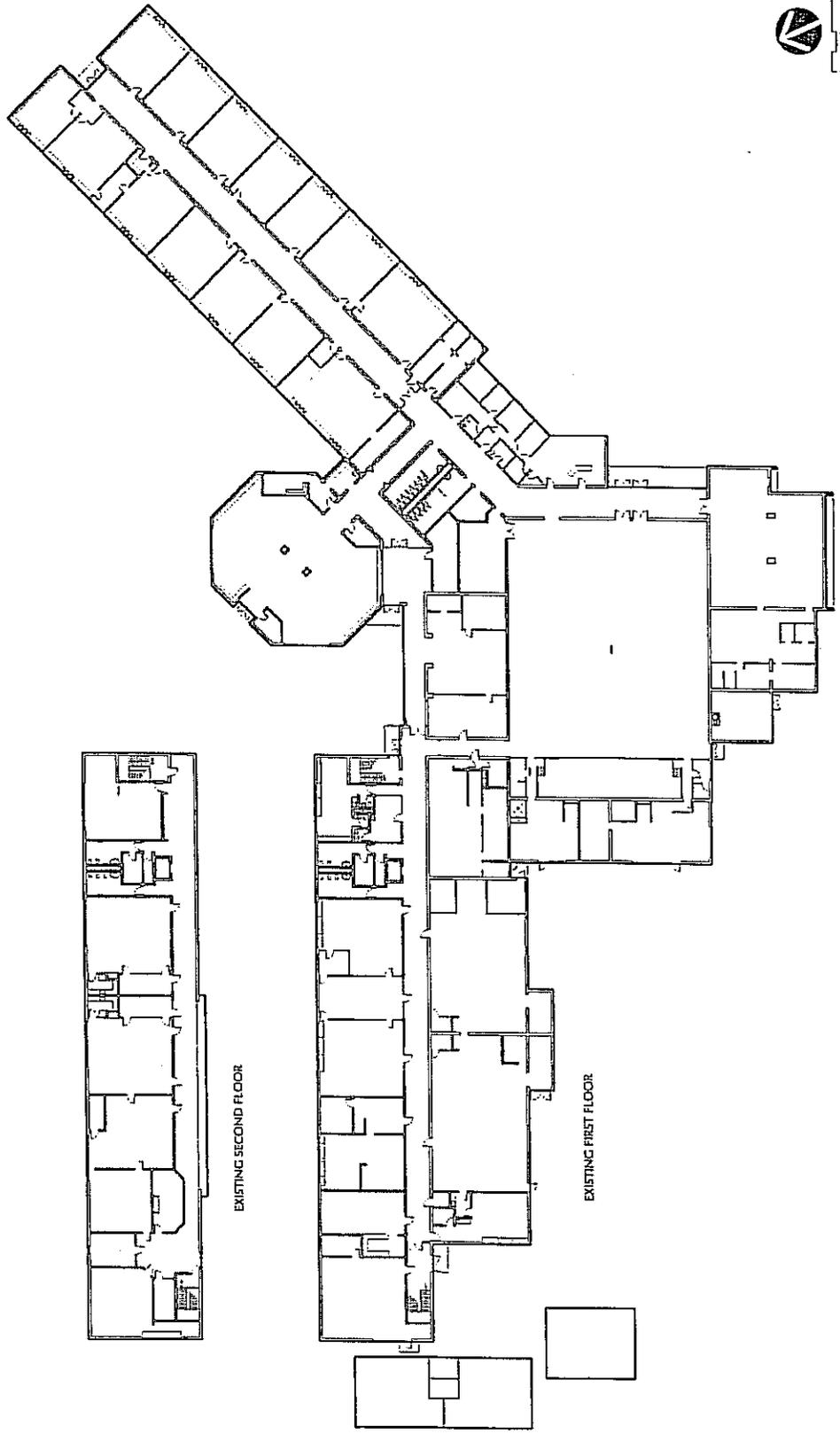


WISCASSET HIGH SCHOOL

296 Students (10/07)

74,878 Square Feet

21 Acres



Wiscasset Schools Study

A CONSOLIDATE AT THE MIDDLE SCHOOL

PROGRAMMING

Current Middle School population (10/07):	213 students
Pre-K through 4th Grade move to Middle School:	+298 students
7th and 8th grade move to High School:	-106 students
New Pre-K - 6th School population:	405 students

Unrenovated Area:	26,500 sf
Light Renovation:	12,500 sf
Standard Renovation:	15,000 sf
Existing Middle School Area:	54,000 sf

Program area for Pre-K - 4th Grade:	22,500 sf
Other new program area:	1,000 sf
7th & 8th Grade program area vacated:	- 8,500 sf
New program area required:	15,000 sf
New circ./struct./mech. (0.40 factor):	6,000 sf
Total New Construction:	21,000 sf

Wiscasset Schools Study

A CONSOLIDATE AT THE MIDDLE SCHOOL

SITE

General Sitework	\$650,000
New Playground	\$100,000
<hr/>	
Estimated Site Upgrades:	\$750,000

STRUCTURAL / BUILDING ENVELOPE

No conditions were observed that would be indicative of serious structural problems, although structure may be contributing to leaking issues associated with the building envelope.

1. There is reoccurring water leakage associated with windows in the east facade of the 2 story, brick-clad wing. It is possible that the construction of the wall and its connection to the structure results in a relatively flexible wall that allows penetration of wind-driven rain, particularly at the windows which rely on the masonry for support. A possible solution would be to install new steel stud backup walls. (Estimated cost is \$60,000.)

2. There is reoccurring water leakage associated with the foundation at the south end of the wing. Steps at the south end have heaved and/or settled and are currently directing water towards the building rather than away from it. Additionally, the sealant in foundation cracks below grade may have deteriorated and will need to be repaired. (Estimated cost is \$15,000.)

Estimated Structural / Envelope Upgrades:	\$75,000
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Wiscasset Schools Study

A CONSOLIDATE AT THE MIDDLE SCHOOL

MECHANICAL

1. Replace / upgrade the existing control system to a DDC Building Management System with remote access.
(Estimated cost is \$95,000.)
2. Provide ADA compliance. (Plumbing fixtures, elevator, etc.)
(Estimated cost is \$135,000.)
3. Add full sprinkler system to entire existing building per NFPA 13. A new water service will be required.
(Estimated cost is \$165,000.)
4. Replace the existing kitchen hood and add a dedicated make-up air unit.
(Estimated cost is \$20,000.)

Estimated Mechanical Upgrades: \$415,000

ELECTRICAL

1. Install new fire alarm system including new control panel, and new fire strobes (ADA). (Estimated cost is \$60,000.)
2. Install emergency lights to meet NFPA 101.
(Estimated cost is \$5,000.)
3. Replace HID lighting in gym with high bay fluorescent T5.
(Estimated cost is \$20,000.)
4. Retrofit all lighting to T8 lamps. (Estimated cost is \$50,000.)

Estimated Electrical Upgrades: \$135,000

Estimated Systems Upgrades: \$550,000

Wiscasset Schools Study

A CONSOLIDATE AT THE MIDDLE SCHOOL

COST ANALYSIS

MIDDLE SCHOOL (PRE-K - 6)

Site Upgrades:		\$750,000
Structural / Envelope Upgrades:		\$75,000
Systems Upgrades:		\$550,000
Light Renovation:	12,500 sf x \$40	\$500,000
Standard Renovation:	15,000 sf x \$80	\$1,200,000
New Construction:	21,000 sf x \$190	\$3,990,000

Middle School Construction Cost: \$7,065,000

HIGH SCHOOL (7-12)

Site Upgrades:		\$300,000
Structural / Envelope Upgrades:		\$0
Systems Upgrades:		\$335,000
Light Renovation:	4,000 sf x \$40	\$160,000
Standard Renovation:	9,375 sf x \$80	\$750,000
New Construction:	12,000 sf x \$190	\$2,280,000

High School Construction Cost: \$3,825,000

Total Construction Cost: \$10,890,000

Construction Contingency at 5%: \$545,000

Soft Costs at 15% (est.) \$1,635,000

Total Project Cost: \$13,070,000

Wiscasset Schools Study

B CONSOLIDATE AT THE PRIMARY SCHOOL

PROGRAMMING

Current Primary School population (10/07):	298 students
Move 5th and 6th Grade to Primary School:	+107 students
New Pre-K - 6th School population:	405 students

Unrenovated Area:	20,000 sf
Light Renovation:	15,000 sf
Standard Renovation:	20,000 sf
<hr/>	
Existing Primary School Area:	55,000 sf

Program area for 5th & 6th Grade:	10,000 sf
New circ./struct./mech. (0.40 factor):	4,000 sf
<hr/>	
Total New Construction:	14,000 sf

Wiscasset Schools Study

B CONSOLIDATE AT THE PRIMARY SCHOOL

SITE

General Sitework	\$350,000
New Multi-Purpose Athletic Field	\$150,000
<hr/>	
Estimated Site Upgrades:	\$500,000

STRUCTURAL / BUILDING ENVELOPE

No conditions were observed that would be indicative of serious structural problems.

1. The public perception that the building is sinking is unfounded. There were no typical signs observed of building settlement such as significant cracking of the foundation walls or brick veneer.

Estimated Structural / Envelope Upgrades:	\$0
---	-----

B2 

Wiscasset Schools Study

B CONSOLIDATE AT THE PRIMARY SCHOOL

MECHANICAL

1. Replace / upgrade the existing control system to a DDC Building Management System with remote access.
(Estimated cost is \$100,000.)
2. Provide ADA compliance. (Plumbing fixtures, etc.)
(Estimated cost is \$35,000.)
3. Add full sprinkler system to entire existing building per NFPA 13. A new water service will be required.
(Estimated cost is \$170,000.)

Estimated Mechanical Upgrades: \$305,000

ELECTRICAL

1. Replace water damaged electrical service entrance equipment, repair ground leakage around conduits.
(Estimated cost is \$30,000.)
2. Install new fire alarm strobes (ADA).
(Estimated cost is \$15,000.)
3. Install emergency lights to meet NFPA 101.
(Estimated cost is \$5,000.)
4. Replace HID lighting in gym with high bay florescent T5.
(Estimated cost is \$10,000.)
5. Retrofit all lighting to T8 lamps. (Estimated cost is \$50,000.)

Estimated Mechanical Upgrades: \$110,000

Estimated Systems Upgrades: \$415,000

Wiscasset Schools Study

B CONSOLIDATE AT THE PRIMARY SCHOOL

COST ANALYSIS

PRIMARY SCHOOL (PRE-K - 6)

Site Upgrades:		\$500,000
Structural / Envelope Upgrades:		\$0
Systems Upgrades:		\$415,000
Light Renovation:	15,000 sf x \$40	\$600,000
Standard Renovation:	20,000 sf x \$80	\$1,600,000
New Construction:	14,000 sf x \$190	\$2,660,000
Primary School Construction Cost:		\$5,775,000

HIGH SCHOOL (7-12)

Site Upgrades:		\$300,000
Structural / Envelope Upgrades:		\$0
Systems Upgrades:		\$335,000
Light Renovation:	4,000 sf x \$40	\$160,000
Standard Renovation:	9,375 sf x \$80	\$750,000
New Construction:	12,000 sf x \$190	\$2,280,000
High School Construction Cost:		\$3,825,000

Total Construction Cost: **\$9,600,000**

Construction Contingency at 5%: \$475,000

Soft Costs at 15% (est.) \$1,425,000

Total Project Cost: **\$11,500,000**

Wiscasset Schools Study

C KEEP ALL EXISTING SCHOOLS

SITE

Primary School General Sitework	\$350,000
Middle School General Sitework	\$150,000
High School General Sitework	\$0
<hr/>	
Estimated Site Upgrades:	\$500,000

STRUCTURAL / BUILDING ENVELOPE

Primary School Upgrades	\$0
Middle School Upgrades	\$75,000
High School Upgrades	\$0
<hr/>	
Estimated Structural / Envelope Upgrades:	\$75,000

Wiscasset Schools Study

C KEEP ALL EXISTING SCHOOLS

MECHANICAL

Estimated upgrades for Primary School:	\$305,000
Estimated upgrades for Middle School:	\$415,000
Estimated upgrades for High School:	\$240,000
<hr/>	
Estimated Mechanical Upgrades:	\$960,000

ELECTRICAL

Estimated upgrades for Primary School:	\$110,000
Estimated upgrades for Middle School:	\$135,000
Estimated upgrades for High School:	\$95,000
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Estimated Electrical Upgrades:	\$340,000

Estimated Systems Upgrades:	\$1,300,000
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Wiscasset Schools Study

C KEEP ALL EXISTING SCHOOLS

COST ANALYSIS

Site Upgrades:	\$500,000
Structural / Envelope Upgrades:	\$75,000
Systems Upgrades:	\$1,300,000
Primary School Renovations	\$100,000
Middle School Renovations	\$175,000
High School Renovations	\$750,000
<hr/>	
Total Construction Cost:	\$2,900,000
Construction Contingency at 5%:	\$150,000
Soft Costs at 15% (est.)	\$450,000
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Total Project Cost:	\$3,500,000

Wiscasset Schools Study

PROPOSED STRATEGY FOR PHASE II

- A. REVIEW AND REFINE FINDINGS
WITH LOCAL COMMITTEES

- B. SELECT AN OPTION FOR FURTHER STUDY:
 - APPROPRIATENESS
 - COSTS
 - SAVINGS
 - CONSOLIDATION IMPACT

- C. APPROACH D.O.E. REGARDING FUNDING OPTIONS

- D. PREPARE AND PRESENT
STRATEGY / PLAN / COSTS / TIMELINE

CARROLL ASSOCIATES

LANDSCAPE ARCHITECTS

PROJECT MEMO: Wiscasset Schools

TO: Darren Commerford

FROM: Pat Carroll

DATE: September 24, 2007

RE: Analysis of Existing Conditions

A site visit was made to the Wiscasset Primary School and the Middle School Sites on August 23, 2007. The purpose of the visit was to observe the condition of the existing school sites and determine their appropriateness to accommodate major changes in program proposed to consolidate student populations due to declining student enrollment. It is our understanding that the options being considered by the Wiscasset School Department include:

1. Closing the Primary School and moving students Pre K-4 to the Middle School
2. Closing the Middle School and moving Grades 5-6 to the Primary School.

In either case, Grades 7-8 will be relocated to the High School. The following observations were made:

Existing Primary School.

Location/ Parcel Size.

- Location. The existing Primary School consists of a cluster of one-story buildings located on Gardiner Road just south of the High School. The site is directly abutting land owned by the Town of Wiscasset on which the Community Center is located. This Town owned parcel also abuts the High School. Proximity to adjacent Town facilities and the High School is desirable, and could provide opportunities to share access, field use, and uses between the various entities.
- Size. The site contains approximately 32 acres in a long, narrow configuration approximately 350 feet wide by over 3500 feet deep. The majority of the school development is concentrated in the front 1000 feet of the parcel. The rear of the site rises significantly to a wooded ridge where the Town land abuts.

Circulation.

- Bus. Existing school bus circulation arrives along the north side of the building and circulates to a turnaround at the northeast side of the building adjacent to the hard play area. There appears to be room for approximately 5 busses to stack in the drop-off area at one time. This area does provide adequate separation between automobiles and busses and appears that students can move safely between the bus loading area and the school building.
- Automobile. Staff, visitor, and parent drop-off parking is located on the front (east) and south (south) sides of the building. Access to both parking areas is provided through a separate driveway cut located approximately 160- feet south of the bus drive. The front area accommodates approximately 44 spaces in a distinct and separated area where parent pickup and drop-off occurs. Separate parking areas are indicated for staff parking along the south side with approximately 46 spaces- this appears to provide adequate parking to meet the needs of the school.
- Pedestrian. Pedestrian walkways are located throughout the school and in general provide safe, easy access to the school. Major student access to the playground areas and bus drop-off zone is out of the cafeteria/ gymnasium. Visitor access to the building is less clear, as the administration/ main entrance is hidden in the courtyard with limited or no visibility from the visitor parking lot.

- Service. Service vehicles utilize the bus drop-off driveway and loop area, which does provide clean separation from most vehicles and pedestrians. The building site is completely surrounded by asphalt pavement which also functions as a fire/ emergency lane around the building.

Site Features.

- Slope/ Grading Issues. The existing site where developed is relatively flat which should aid in providing accessible routes. It is noted that the grading drains towards the building in several places, perhaps the result of settling or revised grading for the parking lots and driveways. A key issue which will need to be addressed is providing positive drainage away from the buildings and how to collect/ disperse drainage from the multiple roofs that are on the buildings. The rear portion of the site is relatively steep and will make its development for ballfields or parking somewhat difficult and costly. These grades do seem manageable however, should this area be needed to need program requirements upon consolidation.
- Vegetation. The developed portion of the site has multiple large trees and landscape which add to the character of the site. Any reconfiguration of the site should attempt to protect and preserve the existing trees and shrubs. The rear of the site is heavily wooded and will require significant clearing for any sizable site improvement.
- Access. The school is accessible to the exterior through a series of ramps located at the north and south sides of the building. Key to any expansion plans for the school will be the ability to make all areas fully accessible.

Playground Program Requirements.

- Ballfields. Limited field space currently exists at the Primary School, consisting of some small, informal lawn adjacent to the playground area. Development of adequate playfields will become a critical component of any expansion plans at this school site. Based on DOE program requirements, a baseball, softball and multipurpose field may be desired to meet the needs of the middle school population (grades 5-6). This can probably be located in the rear of the property but could be costly to develop due to grades and existing vegetation.
- Playground Areas. The existing playground areas consist of a series of independent play components and a larger play structure. Several of these components are old and probably do not meet current guidelines for safety or accessibility and should be replaced. A large hard play area is designated at the southwest side of the school and seems able to accommodate a large number of students effectively.

Recommendations:

1. Reconfigure bus drop-off area to front of building so all students/ visitors enter the building at one location.
2. Expand parking to accommodate staff and visitor needs (+/- 100 spaces total)
3. Reconfigure walkways and sidewalks to provide clear, safe circulation to a limited number of accessible points.
4. Reconfigure service drive to provide a distinct separated service area.
5. Regrade around the building to provide positive drainage away.
6. Upgrade the playground area, provide accessible route, and replace outmoded equipment and safety surfacing.
7. Construct new multipurpose field in rear of property adjacent to the playground area.

Recommended Budgets for sitework:

- General Sitework \$ 350,000.00
- Ballfield \$ 150,000.00
- Total Sitework \$ 500,000.00

Existing Middle School.

Location/ Parcel Size.

- Location. The existing Middle School consists of an assortment of buildings and additions including the original Wiscasset School. Its location on Route 218 is close to downtown Wiscasset and fronts onto the Sheepscot River. The school is surrounded by residential neighborhoods and uses.
- Size. The site contains approximately 5 acres in a constricted configuration which includes approximately 100 ft of frontage on Route 218. The majority of the school development is concentrated in the back of the parcel adjacent to the Sheepscot River. There is little room for expansion as most adjacent land is under private residential control.

Circulation.

- Bus. Existing school bus circulation arrives along the west side of the building and circulates to a turnaround at the southwest side of the building adjacent to the playfield area. There appears to be room for approximately 4 busses to stack in the drop-off area at one time. Busses are forced to circulate through the parking lot to access the drop-off point, which creates conflict and safety issues those times of the day. The bus lane is also constrained by the rear access drive which cuts through the bus area as well as the main parking lot which requires vehicles to maneuver through the loading zone in order to.
- Automobile. Staff, visitor, and parent drop-off parking is located on the front (west) and north sides of the building. The main parking area is configured as angle parking with one way lanes. Approximately 40 spaces are located in this area. A second parking area located along the north side of the building accommodates another 25 staff spaces. Access to this lot is constrained and requires access around the rear of the building, exiting back onto Route 218 through a small residential street (Morton Street).
- Pedestrian. Due to the tight site and overlap of vehicular circulation, many pedestrian conflicts currently occur on the middle School site. There is limited access for pedestrians walking to school, requiring walkers to move through the parking lot, across the bus loop, and then into the building. Additionally, students must cross the service drive to access the playground and ballfield areas.
- Service. Service vehicles either park in the bus loop area or circulate around the south side of the building to the rear where the majority of service needs occur. Existing vehicles must completely encircle the building and exit through Morton Street. It is noted that a very tight corner exists along the northwest corner of the school with limited travel lane and very poor visibility.

Site Features.

- Slope/ Grading Issues. The property is extremely constrained on the east with slopes dropping off dramatically towards the river. The service drive cuts the site and drops significantly to provide access to the lower floors on the back side. Grades rise again towards the north with exposed ledge apparent along the northwest sides of the property.
- Vegetation. The site has significant numbers of large deciduous trees scattered throughout the front of the property, examples of the history and longevity of the site as a school. These trees provide a strong sense of place for the site and should be preserved if at all possible.
- Access. The school is accessible to the exterior through a series of ramps located at the north and south sides of the building. Key to any expansion plans for the school will be the ability to make all areas fully accessible.

Playground Program Requirements.

- Ballfields. A series of ballfields currently exist on the south side of the school, accommodating softball and a multipurpose field. A lower field on land adjacent to the school property is utilized

by the school and little league teams. It is noted that this field is not on school property; however its use is important to fulfilling the playfield needs of the school.

- Playground Areas. A new playground structure is currently under construction and should provide use for a significant number of students. Hardplay areas are located adjacent to the ballfields consisting of basketball court and tennis courts, which we believe are owned and maintained by the Town.

Recommendations:

1. Reconfigure parking at entrance to provide safe, accessible route to building entrance for visitors and students.
2. Expand parking to accommodate staff and visitor needs (+/- 100 spaces total) - look at expanding onto hard play area if possible.
3. Reconfigure walkways and sidewalks to provide clear, safe circulation to a limited number of accessible points.
4. Reconfigure service drive to provide a distinct separated service area with turnaround capabilities so that loop circulation is not required.
5. Upgrade the playfield area, provide accessible route, and reconfigure playfields as much as possible.
6. Construct new playground and hard play area in rear of property adjacent to the existing playground area.

Recommended Budgets for sitework:

- General Sitework \$ 550,000.00
 - Ballfield \$ 100,000.00
- Total Sitework \$ 650,000.00



150 US Route One
Falmouth, Maine 04
Tel. 207 781.5242
Fax. 207 781.4245

September 7, 2007
File: 07345

Mr. Darren Commerford
STEPHEN BLATT ARCHITECTS
10 Danforth Street
Portland, ME 04101

RE: WISCASSET SCHOOL STUDY

Dear Darren:

This letter will summarize my observations made on our August 23, 2007 site visit to the Wiscasset Primary and Middle Schools. During that site visit I walked through both buildings with John Merry, the Maintenance Director for Wiscasset Schools. Subsequent to our site visit, I briefly reviewed structural drawings of the two schools provided by Stephen Blatt Architects.

Primary School:

In my walk through the Primary School I did not observe conditions that would indicate any structural problems exist. John Merry stated that there was some concern that the original middle wing of the school had undergone some amount of settlement recently.

I did not observe any signs of settlement that would be typical for this type of building, such as significant cracking of foundation walls or exterior brick veneer. The brick veneer appeared to be in very good condition. I checked bearing pressures at the perimeter footings for the middle wing and found them to be quite low.

It is certainly possible that settlement has occurred, but further investigation is required to verify location and magnitude of settlement. This could involve survey work to determine elevations and a geotechnical investigation involving test pits and/or soil borings. Certainly a geotechnical investigation should be done prior to developing plans for an addition to the school.

• 2
• 2



Mr. Darren Commerford
September 7, 2007
Page Two

Middle School:

The Middle School consists of two sections, the original structure which is largely wood framed, and a new, steel framed addition. As with the Primary School, I did not observe conditions that would be indicative of serious structural problems, although structure may be contributing to water problems in the addition.

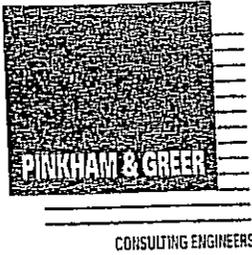
John Merry said that structure that was exposed during a recent renovation of the original building appeared to be in good condition. The laminated wood arches and roof deck in the gym are water stained, but they did not appear to be deteriorated.

Water problems in the addition appear to be associated with window leaks and possibly with leaks in the south foundation wall of the building. At the south end, exterior concrete steps have heaved and/or settled and direct rain water toward the building rather than away from it. Concrete has cracked, as it should, at control joints, but it appeared that sealant in the joints had deteriorated and may not have extended below the exterior finish grade thus allowing water to enter. Water problems in this area may also be due to ground water levels rising above the floor slab level during heavy rain.

Leaks in the east wall of the addition appear to be related to the windows. Many factors can cause or contribute to these leaks including flashing details, joints between window units, and the windows themselves, none of which are strictly structural issues, but structure could be contributing to some degree.

The original drawings indicate that the wall consists of brick veneer, an air space, 2" of rigid insulation, and concrete masonry back-up. Dimensions given on the drawings indicate that the air space is only $\frac{3}{4}$ " wide, which, while a common detail when the structure was designed, is not considered adequate by current standards.

The drawings also indicate concrete masonry back-up is constructed using unreinforced 6" concrete masonry units (CMU). Specific details for connecting the CMU to the structure are not shown on the drawings that we have. It is possible that the 6" CMU (as compared to 8" CMU) and its connection to the structure results in a relatively flexible wall that allows penetration of wind-driven rain, particularly at the windows which rely on the masonry for support.



Mr. Darren Commerford
September 7, 2007
Page Three

In general, the brick veneer on the east wall appeared to be in good condition, but, under wind load, hairline cracks can open and the joints between window units and masonry can flex allowing rain to penetrate. Again, these are not structural problems as much as they are building envelope issues, perhaps, but they could be contributing to the leaking.

The overall structure itself is likely relatively flexible from a lateral load standpoint, particularly above the first structural floor. No specific lateral load system is shown on the original drawings, and details indicate that the bottom chord of the open-web steel joists at floors and roof are to be welded to columns. This was a somewhat common practice at the time the building was designed and was considered to provide lateral support, but more than likely did not produce a structure with adequate lateral stiffness.

None of the above mentioned issues are safety issues, they are serviceability issues.

Our opinions and comments in this letter are based on limited visual observation only. It is assumed that the conditions observed are representative of conditions throughout the buildings, but conditions may exist that differ from those observed. No calculations were performed other than the check of bearing pressure at the Primary School.

Please contact me if you wish to discuss our observations and opinions.

Sincerely,

PINKHAM & GREER

A handwritten signature in black ink that reads "David K. Pinkham". The signature is written in a cursive, flowing style.

David K. Pinkham, P.E.

DKP/rlo

Wiscasset Middle and Primary Schools
Wiscasset, ME
9/21/07

Primary School Mechanical and Electrical Scope:

HVAC

1. There are two (2) Smith 28 series oil-fired cast-iron hot water boilers located in the boiler room. One of the boilers was installed in 1991 as part of a new addition and the second one was installed in 1996 when the original building was converted from electric heat. Each boiler has a net output of 2172 MBH. These boilers should have a useful service life of 30-40 years. There is a 10,000 gallon double-wall underground oil storage tank that was installed in 1988. There is an existing combustion air louver and fan at the exterior wall. There are two (2) base-mounted hot water heating pumps.
2. The original building is 1973 construction and was originally heated with electric resistance heating. The building was converted to oil-fired hot water heating in 1992 and currently has classroom unit ventilators with supplemental perimeter heating by hot water fin-tube. Current codes and standards require that 15-20 cfm per student of outside air continuously introduced during "occupied" periods.
3. The 1996 addition also has classroom unit ventilators along with some ducted air systems with mechanically introduced ventilation (Computer Room and Media Center). The air handling unit is located in the Basement.
4. There are numerous rooms that apparently have no mechanically-introduced ventilation.
5. Automatic temperature controls for the original building and addition are pneumatic (Honeywell). Honeywell currently has a maintenance contract with the school system. Installation of a direct digital control Building Automation System (BAS) would provide improved control and reduced energy use.
6. The main kitchen hood appears to be compliant with current codes. The source of make-up air is via transfer from the Gymnasium / Cafeteria. The kitchen currently is not used for food preparation (serving meals only). There is a condensate hood above the dishwasher. The kitchen equipment uses propane gas.
7. There are numerous thru-the-wall / window air conditioning units.
8. Miscellaneous exhaust fans from the original building have exceeded their useful life expectancy and should be replaced.
9. The Gymnasium/Cafeteria is heated by horizontal unit heaters and has minimal mechanical ventilation. Increased ventilation should be considered to meet design occupancy requirements.
10. Current energy use is 24,100 gallons of heating oil and 293,200 KWH of electricity.

11. The current building floor area is approximately 55,134 SF. There is sufficient existing boiler capacity to support an addition of approximately 52,866 SF especially if the existing building envelope is upgraded.

Plumbing

1. Numerous existing plumbing fixtures including classroom sinks and water coolers do not meet the current Americans with Disabilities Act. Where required to meet ADA, new fixtures including dual height water coolers should be provided. Water conserving fixtures should be considered to reduce water use. Installation of automatic electronic faucets and flush valves would conserve water and improve sanitation.
2. The boiler room contains a storage type water heater with bayonet heat exchanger to use the heating system when the boilers are operating. A separate oil-fired water heater is used during the non-heating months. One of the main heating pumps is operated continuously during the summer. There are a couple of electric storage water heaters located in original building.
3. Existing toilets are flush valve-type.
4. There is an original pneumatic sewage ejector located in the Basement. The ejector should be replaced and/or relocated. The ejector pit also has an electric sump pump with a gasoline powered back-up pump. The ejector should be replaced with a packaged exterior unit with duplex grinder pumps and high level alarms.
5. A 4" city water service enters the basement.
6. A building expansion is unlikely to be restricted by the existing plumbing system.

Sprinkler

1. The 1996 Addition has a "HydroPro" sprinkler system. The original 1973 building is not sprinklered.
2. The entire building should be sprinklered. An NFPA 13 system is desirable but would require a larger water service (6").

MECHANICAL SUMMARY

1. The existing control system should be replaced / upgraded to a DDC Building Management System with remote access. Estimated cost \$100,000.
2. Plumbing fixtures should be replaced for ADA compliance.
3. The building should be fully sprinklered per NFPA13. A new water service will be required. Estimated cost \$165,000.
4. Any building expansion should consider the location of the existing boiler room, chimney and existing underground oil tank.

Electrical

ELECTRIC SERVICE

The building electric service emanates from an existing CMP Co. pole. Service is underground from pad mounted transformer at rear of the school. Meter is mounted next to transformer.

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Service equipment is located in the basement of the original building under the existing library area. There are two main distribution panels one rated 400A and one rated 800A for a total of 1200A capacity @ 277/480, 3 phase, 4 wire. New subpanels were installed for the 1996 addition. Service size is more than adequate for the existing facility. There is some spare capacity available in the existing service for a new addition. There is evidence of water infiltration at the electrical conduits coming into the main switchgear. Some of the switchgear may need to be replaced.

GENERAL LIGHTING

Lighting in original part of the building is predominantly recessed or pendant fluorescent fixtures with T8 lamps.

Lighting in 1996 addition is recessed fluorescent fixtures with T8 lamps. The multipurpose has pendant mounted Holophane HID fixtures.

EXIT AND EMERGENCY LIGHTING

Illuminated exit signs are present at most egress paths. Many of the exit signs are fluorescent lamps. Emergency lighting is inadequate in some areas. The existing emergency lighting consists of battery units and a few remote heads. Emergency and emergency lighting does not comply with NFPA 101.

EXTERIOR LIGHTING

Security lighting on the building exterior consists of HID wall packs on 1996 addition and 12' poles around original portion of the building.

FIRE ALARM SYSTEM

The existing system control panel is a Simplex 4002 zoned system located in basement. System consists of pullstations at egress doors, several heat detectors and horns. Very few strobes in the building. Each classroom should have a strobe for ADA compliance for hearing impaired. Smoke detection and audio/visual devices in the building are inadequate.

SECURITY SYSTEM

The building has a basic security system with two keypads and several motion detectors and door contacts.

ELECTRICAL RECOMMENDATIONS:

1. Replace water damaged electrical service entrance equipment, repair ground water leakage around conduits. \$30,000
2. Install new fire alarm strobes to meet ADA. \$15,000
3. Install emergency lights to meet NFPA 101. \$5,000
4. Replace HID lighting in gym with high bay fluorescent T5. \$9,000
5. Retrofit all lighting to T8 lamps. \$60,000

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Middle School Mechanical and Electrical Scope:

HVAC

1. The building has two (2) oil-fired cast-iron hot water heating boilers. Gross boiler capacity is approximately 2200 MBH each. One of the boilers has tankless water heaters for domestic water heating. Both of the boilers are relatively new. One is 1996 vintage and the other is 2002. These boilers should have a useful service life of 30-40 years. There are two (2) inline main circulating pumps. There are two (2) boiler breechings to the chimney. Provisions for combustion air and cooling air from the outside appear to be adequate. The supply hot water temperature has outside air reset from a 3-way control valve.
2. The existing kitchen hood doesn't comply with current codes such as NFPA96 and the IBC. There is no fire suppression system. These systems should be upgraded to meet current codes (NFPA and the IBC).
3. The building has classroom unit ventilators. The original building had unit ventilators installed as part of a ventilation upgrade project that was completed approximately four (4) years ago. As part of the same project, the Gymnasium had a new heating and ventilating unit installed. This unit is located outside on a structural frame. The Media Center has two (2) unit ventilators. The newest addition had a renovation project completed in 1998 at which time electric heat was removed and most of the mechanical system components were replaced. A new piping system was installed. Unit ventilators were used in the classrooms and Cafeteria. The Computer Room is air conditioned.
4. The oil tank is 2500 gallon double-wall underground with leak monitoring.
5. Existing controls are Honeywell pneumatic and Barber-Colman electric controls that were originally for the electric radiant ceiling panels that have since been abandoned.
6. Miscellaneous exhaust fans are past their useful life expectancy and should be replaced.
7. Current energy use is 13,000 gallons of heating oil and 268,200 KWH of electricity.
8. The current building floor area is approximately 54,305 SF. There is sufficient existing boiler capacity to support an addition of approximately 55,000 SF, especially if the existing building envelope is upgraded.

Plumbing

1. Where required to meet ADA, new fixtures including dual height water coolers should be provided. Existing classroom sinks are also non-ADA compliant. Installation of automatic electronic flush valves would conserve water and improve sanitation.
2. The existing domestic water service should include backflow prevention devices as required by current codes.
3. A Triangle Tube indirect-fired water heater provides dual temperature hot water with separate recirculation loops.
4. There is city water and gravity sewer.
5. A building expansion is unlikely to be restricted by the existing plumbing system.

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Sprinkler

1. The building is not sprinklered.
2. The building should have as a minimum a "Hydropro" sprinkler system installed throughout. An NFPA13 system is desirable but may require a larger water service (6").

MECHANICAL SUMMARY

1. The existing control system should be replaced / upgraded to a BDC Building Management System with remote access. Estimated cost \$95,000.
2. Plumbing fixtures should be replaced for ADA compliance.
3. The kitchen hood should be replaced and a dedicated make-up air unit added. Estimated cost \$20,000.
4. The building should be fully sprinklered per NFPA13. A new water service will be required. Estimated cost \$162,000.
5. Any building expansion should consider the location of the existing boiler room, chimney and existing underground oil tank.

Electrical

ELECTRIC SERVICE

The building electric service emanates from an existing CMP Co. pole. Service is underground from pad mounted transformer at front of school. Meter is mounted next to transformer. Service equipment is located in the basement electrical room next to kitchen storage. The main distribution panel Westinghouse 1200A 277/480, 3 phase, 4 wire. Sub panels exist throughout the building with local dry type transformers to serve branch loads. Service size is more than adequate for the existing facility. There is some spare capacity available in the existing service for a new addition.

GENERAL LIGHTING

Lighting in the original classroom wing has recently been redone (2003) with recessed energy efficient fluorescent fixtures with T8 lamps.

Lighting in the 1980's is primarily surface mounted "wrap arounds" fluorescent fixtures

Lighting in the multipurpose is pendent mounted high bay HID fixtures.

EXIT AND EMERGENCY LIGHTING

Illuminated exit signs are present at most egress paths. Many of the exit signs are fluorescent lamps. Emergency lighting is inadequate in some areas. The existing emergency lighting consists of battery units and a few remote heads. Emergency and emergency lighting does not comply with NFPA 101.

EXTERIOR LIGHTING

Security lighting on the building exterior consists of HID wall packs.

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FIRE ALARM SYSTEM

The existing system control panel is a Silent Knight 4 zone system located in reception office. System consists of pullstations at egress doors, several heat detectors and horns. Very few strobes in the building. Each classroom should have a strobe for ADA compliance for hearing impaired. Smoke detection and audio/visual devices in the building are inadequate.

ELECTRICAL RECOMMENDATIONS:

1. Install new fire alarm system including new control panel, new fire alarm strobes to meet ADA. \$75,000
2. Install emergency lights to meet NFPA 101. \$5,000
3. Replace HID lighting in gym with high bay fluorescent T5. \$20,000
4. Retrofit all lighting to T8 lamps. \$60,000
5. Remove electric radiant ceiling panels in all classrooms. \$3,000

WISCASSET SCHOOLS STUDY - SEPTEMBER 2007

MIDDLE SCHOOL (5-8, 216 STUDENTS): EXISTING PROGRAM

SPACE / FUNCTION	EXISTING AREA	GUIDELINES	SURPLUS/DEFICIT
Administrative			
Front Office 111	431	500	-69
Office Storage 111A	68	100	-32
Principal//Conference	238	125	113
Conference 112A	277	300	-23
Facilities Director 112B	113	125	-12
Staff Prep 110B	145	100	45
Health Clinic	212	350	-138
Staff Breakroom 05	458	350	108
Staff WC (M)	28	130	-102
Staff WC (W)	28	130	-102
Subtotal	1,998	2,210	-212
Classrooms			
5th Grade Classroom 106	777	800	-23
5th Grade Classroom 107	756	800	-44
5th Grade Classroom 108	815	800	15
6th Grade Classroom 101	868	800	68
6th Grade Classroom 103	990	800	190
6th Grade Classroom 104	860	800	60
7th-8th Grade Soc. Stud. 114 (7 H.R.)	775	800	-25
7th-8th Grade Math 116 (7 H.R.)	775	800	-25
7th-8th Grade Science 205 (8 H.R.)	884	900	-16
7th Grade Language Arts 117 (7 H.R.)	806	800	6
8th Grade Language Arts 206 (8 H.R.)	779	800	-21
5th-8th Health	779	800	-21
Subtotal	9,864	9,700	164
Special Services			
5th-6th Resource 102A	560	560	Program
5th-6th Resource 102B	316	316	Program
5th-6th Resource 105	268	300	-32
5th-6th Composite WC	50	65	-15
7th-8th Composite/Resource OT/PT 01	985	800	185
7th-8th Composite 01A	322	322	Program
7th-8th Composite WC	53	65	-12
7th Grade Resource 115	827	800	27
7th-8th Project Reach 203	805	800	5
7th-8th Alt. Ed. Literacy 207 (8 H.R.)	812	800	12
7th-8th Alt. Ed. Math 209	683	800	-117
5th-8th Guidance Office 202	281	100	181
5th-8th Guidance Classroom 204	719	800	-81
5th-8th Gifted & Talented 208	468	468	Program
Social Worker 112C	137	100	37

Special Ed. Tech.	128	125	3
Subtotal	7,414	7,221	193

Allied & Media			
Gym	6,144	4,368	1,776
Stage	821	1,000	-179
Storage 109A/109B	403	403	Program
P.E. Office	241	241	Program
Boys Locker Room	502	502	Program
Girls Locker Room	502	502	Program
Cafeteria 04	2,770	1,500	1,270
Kitchen (for Pre-K - 8)	1,619	1,478	141
Kitchen Office	127	150	-23
Art 118	1,163	1,300	-137
Music - Instrumental 07 & Vocal 06	1,566	1,000	566
Library	1,129	1,450	-321
Computer Lab	887	787	Program
Computer Office/Server	100	125	-25
Subtotal	17,974	14,806	3,168

Miscellaneous			
Storage 01B	328	0	102
Storage 05A	96	0	96
Storage 08	884	0	884
Storage (1st Flr - Main Corridor)	102	0	102
Storage (1st Flr - Old Wing Corridor)	95	0	95
Storage 2D	59	0	59
Janitor (Basement)	32	50	-18
Janitor (1st Flr - Main Corridor)	82	50	32
Janitor (1st Flr - Old Wing Corridor)	23	50	-27
Janitor 2C	81	50	31
WC (off Gym and Main Corridor)	42	0	42
Boys WC (Main Corridor - Public)	222	222	Program
Girls WC (Main Corridor - Public)	219	219	Program
Boys WC (Old Wing - Public)	185	185	Program
Girls WC (Old Wing - Public)	185	385	200
Boys 2A	224	224	Program
Girls 2B	221	221	Program
Subtotal	3,080	1,656	1,424

Total Program Square Footage	40,330	35,593	4,737
Circulation Walls/Mechanical	13,970	14,237	267
Total Square Footage	54,300	49,830	4,470

WISCASSET SCHOOLS STUDY - SEPTEMBER 2007

PRIMARY SCHOOL (PRE-K - 4, 312 STUDENTS) : EXISTING PROGRAM

SPACE / FUNCTION	EXISTING AREA	GUIDELINES	SURPLUS/DEFICIT
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Administrative

Administration Office 110	661	500	-161
Staff Breakroom 123	616	350	266
Principal's Office 111	238	125	113
Staff WCs (2)	68	130	-62
Staff WC 179	47	130	-83
Health Clinic 117-119	185	350	-165
Volunteer & Staff Prep 116	262	250	12
Staff Prep Area 148	105	100	5
Conference 208	1,003	300	703
Subtotal	3,185	2,235	950

Early Learning Center

E.L.C. Classroom #1 101	837	1,000	-163
E.L.C. Classroom #2 105	770	1,000	-230
E.L.C. Staff Support Space 102	564	0	564
E.L.C. WC 104	274	130	144
E.L.C. Miscellaneous 106	96	0	96
Subtotal	2,541	2,130	411

Kindergarten Classrooms

Kindergarten Classroom 145	1,810	1,000	810
WC 146	21	65	-44
WC 147	254	65	189
Kindergarten Classroom 149	1,237	1,000	237
WC 150	21	65	-44
Kindergarten Storage	116	0	116
Kindergarten Classroom 170	1,245	1,000	245
Subtotal	4,704	3,195	1,509

1st Grade Classrooms

1st Grade Classroom 166	749	800	-51
1st Grade Classroom 173	708	800	-92
WC 167	274	195	79
1st Grade Classroom (nonexisting)	0	800	-800
Subtotal	1,731	2,595	-864

2nd Grade Classrooms

2nd Grade Classroom 184	727	800	-73
2nd Grade Classroom 185	753	800	-47
2nd Grade Classroom 186	753	800	-47
WC 188	42	130	-88
Subtotal	2,275	2,530	-255

3rd Grade Classrooms			
3rd Grade Classroom 192	753	800	-47
3rd Grade Classroom 193	753	800	-47
3rd Grade Classroom 194	734	800	-66
Subtotal	2,240	2,400	-160

4th Grade Classrooms			
4th Grade Classroom 200	1,119	800	319
4th Grade Classroom 207	1,033	800	233
4th Grade Classroom (nonexisting)	0	800	-800
Subtotal	2,152	2,400	-248

Special Services			
Literacy Intervention 128	809	800	9
Guidance 127A+B	104	100	4
Social Worker 132	117	100	17
T-1 / Math Intervention 133	192	300	-108
Math/Literacy Intervention 154	1,085	800	285
Gifted & Talented 141-142	188	350	-162
WC 151	30	65	-35
Room 152 (Open)	163	0	163
WCs 158-159	126	130	-4
Spec. Needs Composite) 161	202	250	-48
WC (off rm 161)	30	65	-35
Spec. Needs Composite) 164	203	250	-47
Classroom 163	899	800	99
Speech 168	139	150	-11
Testing 144	117	75	42
Resource 217	760	800	-40
Resource Support 216	139	150	-11
Subtotal	5,253	5,185	68

Allied & Media			
Gym/Cafeteria	4,412	3,025	1,387
Stage 177	665	1,000	-335
Locker Rooms 176+182	196	196	Program
P.E. Office & Storage 198	243	243	Program
Satellite Cafeteria 187	734	1,560	-826
Warming Kitchen	645	645	Program
Art Room 124	1,231	1,300	-69
Music Room 131	1,138	1,000	138
Art/Music WC 129	254	0	254
Library 135	1,700	1,700	0
Computer Lab 137	1,139	800	339
3rd-4th Grade Computer Lab 191	727	0	727
Family Literacy Center 100	687	800	-113
After School Office 178	67	100	-33
P.E. Office	147	150	-3
Subtotal	13,985	12,519	1,466

Miscellaneous			
Janitor 122	46	50	4
Janitor 138	55	50	5
Boys WC 175 (Public)	178	200	-22
Girls WC 181 (Public)	178	300	-122
WC 195	42	50	42
WCs 202+204	97	130	-33
WCs 213+214	97	130	-33
Maintenance Shop & Storage	598	300	298
Storage 209	139	0	139
Subtotal	1,430	1,160	270

Total Program Square Footage	39,496	36,349	3,147
Circulation/Walls/Mechanical	15,638	14,540	1,098
Total Square Footage	55,134	50,889	4,245