EXHIBIT B
PROJECT SCOPE
NASHOBA REGIONAL SCHOOL DISTRICT

PROJECT FUNDING AGREEMENT

SECTION TWO JUSTIFICATION OF PROPOSED PROJECT

2.1 ENROLLMENT PROJECTIONS

On April 10, 2009 the MSBA and the District conducted a conference call to review the enrollment projections for the Stow Pompositticut and Center Elementary Schools. The MSBA then developed their projections for the Stow Elementary Schools community. The MSBA projections indicate a relatively stable elementary school population through 2017.

The MSBA's letter of May 29, 2009 indicates that the MSBA's projection model sets the 10-year population projection at 600 students for grades K - 5.

At the time of discussions between the community and the MSBA, the district felt the student population could rise to as high as 660 students within the next ten years or shortly thereafter. For that reason, the District has requested, and included in the Summary of Spaces, increased areas for "core" spaces to accommodate future growth. The schematic design assumes these increased spaces as well as the ability to add four classrooms at the second floor level. This approach will allow for a building addition with minimal disruption to the site.

2.2 EDUCATIONAL SPECIFICATION

The educational vision was developed through extensive interviews with the Nashoba Regional Schools Administration and the Pompo and Center Elementary School administration and teachers and staff. The vision was translated into the Final Design Program. The building size is proposed at 98,030 square feet. The listing of program spaces is included in this Section Two in the Proposed Space Summary.

3.4 HAZARDOUS MATERIALS INVESTIGATION REPORT

A hazardous building material survey was completed at the Center School. The details of the finding are defined in the following drawings completed by CDW Consultants, Inc. dated August 31, 2009. The costs to abate and dispose of the materials identified during the survey have been incorporated into the detailed cost estimate in Section 7.2.

CDW CONSULTANTS, INC.
CIVIL & ENVIRONMENTAL ENGINEERS

PRINCIPALS

Yee Cho, P.E., L.S.P.
Kathleen Campbell, P.E., L.S.P.

August 31, 2009

Ms. Lorraine Finnegan
Symmes Maini & McKee Associates, Inc.
1000 Massachusetts Avenue
Cambridge, MA 02138

RE: Hazardous Materials Summary Report
Center School, Great Road, Stow, Massachusetts
CDW Project # 1155

Dear Ms. Finnegan:

CDW Consultants, Inc. (CDW) is pleased to present this letter report summarizing the findings of the pre-demolition testing and hazardous materials survey of Center School ("Site") in the Town of Stow, Massachusetts. The scope of work was to identify and quantify asbestos-containing materials (ACM), lead-based paint (LBP), mercury switches, transformers, light ballasts, fluorescent tubes, and other visible hazardous materials. The ACM survey was performed in accordance with the Environmental Protection Agency (EPA) Asbestos Hazard Emergency Response Act (AHERA) guidelines.

Suspect Asbestos Containing Materials

During the month of August 2009, CDW personnel Susan Cahalan-Roach (Massachusetts Licensed Asbestos Inspector # 060784) and Edwin Morgan (Massachusetts Licensed Asbestos Inspector #51838), conducted a visual inspection of all accessible areas of the site building. A total of 112 bulk samples were collected from materials suspected to contain asbestos. The ACM was categorized by type, location and quantity.

Additionally, accessible areas of the exterior of the site building were inspected to determine the location and estimated quantity of potential ACM.

Suspect ACM were grouped into homogenous areas. By definition a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. The asbestos inspection was conducted in accordance with Massachusetts' regulations 453 CMR 6.00 and NESHAP regulations 29 CFR 1926.

The suspect ACM materials that were identified on materials from the site building were sent to ESML Analytical of Woburn, Massachusetts for analysis. The samples were analyzed for asbestos using polarized light microscopy (PLM) and dispersion staining techniques by EPA Method 600/R-93/116. The ACM testing results are presented below in Table 1. The correlating sample locations that are positive for ACM are shown on Figure 1.

TABLE 1: ACM Testing Results

Sample #	Description	Result	Approximate Quantity
1A	Exterior door caulk	2% Chrysotile	35 Doors
1B	Exterior door caulk	Not analyzed	NA
2A	Exterior window caulk	2% Chrysotile	200 LF
2B	Exterior window caulk	Not analyzed	NA
3A	Exterior window glaze	ND	NA
3B	Exterior window glaze	ND	NA
4A	Black window sill	ND	NA
4B	Black window sill	ND	NA
5A	Wire mesh window glaze	ND	NA
5B	Wire mesh window glaze	ND	NA
6A	Exterior door caulk	2% Chrysotile	Same as sample #1A
6B	Exterior door caulk	Not analyzed	NA
7A	Exterior door black glaze	ND	NA
7B	Exterior door black glaze	ND	NA
8A	Fitting insulation	2% Chrysotile	950 fittings at 1 LF each
8B	Fitting insulation	Not analyzed	NA
9A	Roof: Pearlie Insulation	ND	NA
9B	Roof: Isocyanate	ND	NA
9C	Roof: Tar Gravel	ND	NA
9D	Roof: Insulation	ND	NA
9E	Roof: Edge Flashing	ND	NA
10A	Roof: Pearlie Insulation	ND	NA
10B	Roof: Isocyanate	ND	NA
10C	Roof: Tar Gravel	ND	NA
10D	Roof: Edge Flashing	ND	NA
11A	Roof: Pearlie Insulation	ND	NA
11B	Roof: Isocyanate	ND	NA
11C	Roof: Tar Gravel	ND	NA
11D	Roof: Edge Flashing	ND	NA

TABLE 1 (Continued)

Sample #	Description	Result	Approximate Quantity
12	Roof shingle	ND	NA
13	Residual caulk	10% Chrysotile	5 LF
14	Dot caulk	ND	NA
15A	12x12 Floor Tile	ND	NA
15B	12x12 Floor Tile	ND	NA
16A	Black floor tile material	ND	NA
16B	Black floor tile material	ND	NA
17A	Covebase glue – black	ND	NA
18A	Covebase glue – white	ND	NA
19A	1x1 AT	ND	NA
20A	1x1 AT Pin Hole	ND	NA
21	Pipe insulation	ND	NA
22	Bulletin board	ND	NA
23	Interior door frame caulk	5% Chrysotile	10 Doors
24	Ceiling plaster	ND	NA
25	9x9 Floor tile	10% Chrysotile	25,000 SF
26	Black floor material	ND	NA
27	Ceiling plaster	ND	NA
28	Ceiling plaster	ND	NA
29A	JC/SR	ND	NA
29B	JC/SR	ND	NA
29C	JC/SR	ND	NA
30	9x9 Floor tile	10% Chrysotile	Same as sample # 25
31	Black mastic	ND	NA
32	Ceiling plaster	ND	NA
33	Freezer door insulation	ND	NA
34	12x12 Floor tile	ND	NA
35	Black material under sample #34	ND	NA

TABLE 1 (Continued)

Sample #	Description	Result	Approximate Quantity
36A	2x4 SAT	ND	NA
36B	2x4 SAT	ND	NA
37	Caulk on Wall Crack	ND	NA
38	12x12 Floor tile	ND	NA
39	Yellow mastic	ND	NA
40	Brown floor material	ND	NA
41A	Kitchen ceiling	20% Chrysotile	750 SF
41B	Kitchen ceiling	20% Chrysotile	Same as sample #41A
42	Skim coat	ND	NA
43	Brown coat	ND	NA
44A	Pipe insulation	30% Chrysotile	250 LF
44B	Pipe insulation	ND	NA
45	Hard Fitting	25% Chrysotile 5% Amosite	Same as sample #8A
46	Glaze	2% Chrysotile	3 assemblies
47	9x9 Floor Tile	10% Chrysotile	Same as sample # 25
48	Black mastic	ND	NA
49	Hard fitting	10% Chrysotile	Same as sample #8A
50A	Black coating	ND	NA
50B	Black coating	ND	NA
50C	Black coating	Not analyzed	NA
51	Black board	ND	NA
52	Glue daub	ND	NA
53	Glaze	2% Chrysotile	50 doors
54	Hard fitting	50% Chrysotile	Same as sample #8A
55A	1x1 AT Type II	ND	NA
55B	1x1 AT Type II	ND	NA
56A	Glue Daub	ND	NA

TABLE 1 (Continued)

Sample #	Description	Result	Approximate Quantity
56B	Glue daub	ND	NA
57	Window sill laminate	ND	NA
58	Boiler breeching	ND	NA
59	Boiler insulation	ND	NA
60	Flex connector	ND	NA
61	Hard fitting	30% Chrysotile	Same as sample #8A
62	Shed shingle	ND	NA
63	Shed Shingle Bottom	ND	NA
64	Glaze	ND	NA
65	Glaze	ND	NA
66	Caulk	3% Chrysotile	6,000 LF
67	Glaze	2% Chrysotile	Same as sample #66
68	Caulk	2% Chrysotile	Same as sample #66
69	Caulk	ND	NA
70	Roof shingle	ND	NA
71	Caulk	2% Chrysotile	2 doors
72A	JC/SR	ND	NA
72B	JC/SR	ND	NA
72C	JC/SR	ND	NA
73	12x12 Floor tile	ND	NA
74	9x9 Floor tile	5% Chrysotile	1,800 LF
75	2x4 SAT	ND	NA
76	1x1 AT	ND	NA
77	Glaze	2% Chrysotile	20 windows
78	Caulk	2% Chrysotile	20 LF
79	Caulk	2% Chrysotile	Same as sample #78
80	Roof shingle	ND	NA
81	Roof tar paper	ND	NA

A homogeneous area is determined to contain asbestos if at least one sample collected from that area shows that asbestos is present in an amount greater than 1 percent. The ACM materials that contain greater than 1% of asbestos are listed in the above Table 1. Duplicate samples of positive results were not analyzed.

A copy of the asbestos laboratory analytical report is provided in Appendix A. The ACM sample locations are shown on Figure 1.

Suspect Lead-Based Paint

CDW collected samples from 11 painted areas throughout the site building. Of the samples collected, 5 contained lead. The laboratory results of lead analysis are summarized in Table 2. A copy of the lead paint laboratory report is provided in Appendix B. The paint sampling locations are shown on Figure 1.

TABLE 2: Lead-Based Paint Testing Results

Sample #	Description	Result
LP-1	Light green classroom paint	0.11% wt
LP-2	Dark green classroom paint	0.055% wt
LP-3	Turquoise boiler room paint	0.60% wt
LP-4	White hallway paint	0.034% wt
LP-5	Dark green classroom paint	<0.027% wt
LP-6	Dark turquoise trim paint	<0.028% wt
LP-7	Light blue classroom paint	<0.044%wt
LP-8	White classroom paint	<0.010% wt
LP-9	White gym wall paint	<0.012% wt
LP-10	Purple wall paint	<0.012% wt
LP-11	Yellow paint – stone building	0.012% wt

Removal of the LBP is not required. However, workers must be protected from lead dust generated during demolition of any LBP-covered surfaces, which may occur during renovation activities. If slated for removal, LBP-covered building components should be segregated during demolition for testing to determine whether there are special disposal requirements.

Other Hazardous Materials

CDW identified 320 fluorescent light fixtures, of which, 320 ballasts were identified as suspect PCB-containing. Fluorescent bulbs contain mercury and should be disposed of properly prior to demolition. Approximately 400 fluorescent bulbs were identified throughout the building. Additionally, approximately 20 emergency light batteries containing lead, 40 thermostats and 20 switches in the boiler room potentially contain mercury. Potential freon containing items include one walk in freezer and 20 air conditioning units. Other hazardous materials identified include; various chemicals for cleaning and oils for maintenance.

Recommendations

Based on the results of the hazardous materials survey, we have the following recommendations:

- Identify the extent of work areas that will potentially affect ACM.
- Remove each ACM identified prior to construction work activities by a Massachusetts licensed asbestos abatement contractor, and dispose ACM at an appropriate hazardous non-recycling landfill facility.
- Building materials that tested below one percent asbestos, with the exceptions noted, may be removed and disposed as regular construction debris.
- Remove or segregate damaged lead-based paint or lead-based paint components in areas slated for demolition during renovation in compliance with OSHA lead in construction standards.
- If not able to be recycled or re-used, CDW recommends that other hazardous materials and items containing hazardous materials be removed and disposed of appropriately.

Limitations

The conclusions and recommendations are limited to the information available at the time of the field survey and the scope of services as defined. No subsurface soil or groundwater testing was performed. Where access to portions of the Site or to structures on the site was unavailable or limited, CDW renders no opinion as to the presence of hazardous material or the presence of indirect evidence related to hazardous material in that portion of the site or structure. The testing performed forms the basis for conclusions expressed and areas inaccessible for testing limits those conclusions. No other conclusions, interpretations or recommendations are contained or implied in this report other than those expressed. No other use of this report is warranted without the written consent of CDW Consultants, Inc.

CDW appreciates the opportunity to provide our services for your project.

Very truly yours,

CDW CONSULTANTS, INC.

Susan Cahalan-Roach, P.G.

Susan Cahalan-Roach, P.G.
Project Manager

TABLES	Table 1:	Summary of Asbestos Analytical Results
	Table 2:	Summary of Lead Paint Analytical Results
FIGURE	Figure 1:	ACM and Paint Sample Locations

APPENDICES

Appendix A: Asbestos Sample Laboratory Report
Appendix B: Lead Paint Sample Laboratory Report

SECTION FOUR PREFERRED ALTERNATIVE

4.1 PREFERRED ALTERNATIVE

The preferred alternative for the Nashoba-Pompo/Center Elementary School will consist of comprehensive renovations of and additions to the existing Center Elementary School located at 403 Great Road, Stow, Massachusetts. This combines the Kindergarten through Grade 2 students from the Pompositticut Elementary School with the Grades 3 through 5 students currently at the Center Elementary School. It also relocates Stow's PreK students from the program located in Bolton to this school.

This Preferred Alternative was approved by the MSBA Board of Directors at the June 2009 Board Meeting.

PROJECT DESCRIPTION

Site

The vehicular circulation will be organized to separate the different types of activities. Access from Great Road will be for parent drop off and pick up; visitor and handicapped parking. People will access the building on the west side through controlled doors near the main office.

A new access drive from Hartley Road (east side) will serve school busses and staff parking. People will access the building from the east side through controlled doors near the main office. These doors will share a common lobby.

Building

The existing Center School building will be comprehensively renovated and will house: the PreK and Kindergarten programs; music; OT/PT; Life Skills; the schools' main entry; Administrative, guidance and special needs offices and teaching spaces. Because this building is a different "construction type" from the building addition, a firewall will be constructed between the new and existing construction.

The building addition will consist of the "public wing" and a classroom wing.

The public wing will include: the gymnasium; cafeteria with platform; food prep and serving kitchen; art classrooms; library/media/computer room; mechanical rooms and other support spaces.

The classroom wing will include: classrooms for grades 1 through 5; breakout rooms; reading and other tutorial and special education rooms and the elevator. The roof area off of the second floor will have a "green roof" but will have the capability to add four classrooms and a stair in the future.

Phase 1

The building addition will be constructed in one phase, with the gymnasium, cafeteria, kitchen and library/media center located in the single story wing. The academic wing would be generally two stories. The building would be designed and constructed to allow future build out of four additional classrooms over a one story portion of the classroom wing. This will allow for future classrooms without significant site disruption.

Phase 2

Following completion of the new portion of the building, the Center School students will relocate to the new building. Selective building demolition will take place along with a comprehensive renovation of the existing building.

Site Phasing

Phase 1 will have construction access only from Hartley Road. School busses, teachers, parents and visitors will continue to access the school from Great Road. Security barriers will demark the occupied school from the construction site. Phase two will reverse the access points for construction and school activities.

It is anticipated the outdoor recreational activities for students will greatly be curtailed during phase one due to the need for contractor activities and storage.

Total building size will be 98,030 square feet, in accordance with the space requirements set out in the Proposed Space Summary. A description of the major building systems is in Section 4.3.

The educational vision was developed through extensive interviews with the Nashoba Public Schools' administration and the Pompositticut and Center Elementary Schools administration and teachers. Their vision was translated into the final Summary of Spaces located in Section Two.

4.2 BUDGET STATEMENT FOR EDUCATIONAL OBJECTIVES

The budget statement for educational objectives provides for the following relative to the Nashoba–Pompo/Center Elementary School:

- Offering appropriate regular and special education programs and services.
- Maintaining class size guidelines and quality of learning experiences.
- Supporting the recruitment, hiring, and retention of quality professional and other instructional and administrative staff.
- Meeting legal mandates.
- Supplying funds to maintain the facilities so that they are safe and supportive of learning.
- Providing adequate classroom supplies, equipment, and professional development opportunities to support the educational program.

4.3 BUILDING SYSTEM DESCRIPTION NARRATIVES

The major building construction systems have been defined in the Progress Project Description. Key elements of the Project include:

CONSTRUCTION DELIVERY METHOD

The project is anticipated to proceed in a conventional design-bid-build sequence in accordance with M.G.L. Chapter 149, Section 44.

BUILDING MATERIALS

The exterior design utilizes a composition of brick, masonry, metal and glass to visibly express the school's civic role in the larger community, while respecting the local neighborhood scale and context. All materials are of low maintenance, high durability, and long life. The building orientation and window positioning maximizes internal daylighting, reduces energy demand. The existing building exterior walls will be similar to those of the addition but with retention of existing masonry.

BUILDING SYSTEMS

The major building systems will be specified for maximum efficiency, long service life, and ease of maintenance. The systems will provide appropriate airflow and temperature control, lighting and power in support of building and technology equipment, and will have reduced energy and water consumption. The building will be fully air conditioned less the gymnasium and kitchen. All systems will be specified to maximize life cycle value and to minimize long-term operating costs.

STRUCTURAL SYSTEMS

FOUNDATIONS

Foundations will consist of conventional spread footings. Building columns will bear on reinforced concrete spread footings. Exterior foundation walls will be reinforced cast-in-place concrete walls on continuous reinforced concrete strip footings around the perimeter of the building extending a minimum of 4'-0" below finished grade.

GROUND FLOOR CONSTRUCTION

The ground floor will be a 4-inch (minimum) thick concrete slab on grade, reinforced with welded wire fabric over a vapor barrier, on rigid underslab insulation and a compacted granular structural base course.

TYPICAL ELEVATED FLOOR CONSTRUCTION

Typical elevated floor construction will entail a 3-1/4 inch lightweight concrete slab on composite metal deck reinforced with welded wire fabric on wide flange steel beams and girders framing to steel columns.

ROOF CONSTRUCTION

Typical roof construction will be 1-1/2 inch deep galvanized metal roof deck, spanning between open-web steel bar joists and rolled steel beams supported by wide flange steel girders framing to steel columns. At the long span roofs over the gymnasium and cafeteria, the roof deck will be 3-inch deep galvanized acoustic roof deck supported on long span series steel bar joists and rolled steel beams supported by wide flange steel girders framing to steel columns.

LATERAL LOAD RESISTING SYSTEM

Typical lateral load resisting system will be concentric steel braced frames comprised of hollow steel tube sections. At the gymnasium structure, the lateral loads will be resisted by either concentric steel braced frames or steel rod "X" bracing.

EXISTING BUILDING

Some small portions of the existing building will be demolished and minor modifications will be made to the existing building structure.

PLUMBING SYSTEMS

WATER SUPPLY PIPING SYSTEMS

Cold Water

Cold water supply system will be extended 10'-0" outside the building and connected to the public on-site well. Service entrance will be equipped with a water meter that meets the requirements of the local water department. Code compliant, approved, reduced pressure principle backflow preventers will be provided downstream of the meter.

Cold water will be stored in a 500 gallon tank and delivered as needed by a duplex booster pumping system. Filtration and water softening will be provided, as needed.

Domestic cold water piping will be copper, insulated, distributed throughout the building serving all fixtures and equipment requiring cold water such as kitchen appliances, boilers and ice machines.

Hot Water

Hot water for the kitchen, classroom sinks, and toilet rooms will be provided by two ASME gas-fired condensing water heaters in parallel. Each heater will be sized to provide 66% of the demand. Water will be heated to 140 degrees Fahrenheit for delivery to the kitchen. A central, bronze, master thermostatic mixing valve will reduce the temperature to 120 degrees Fahrenheit for delivery to hand wash lavatories, classroom sinks, showers, and kitchenette sinks. Lavatories will have integral temperature limit stops and/or point-of-use mixers to provide 110 degrees Fahrenheit maximum temperature.

All hot water supply systems will be copper, insulated, circulated using bronze circulating pumps controlled by immersion aqua stats.

WASTE AND VENT

Waste and vent piping shall be cast iron and will exit the building and connect by gravity to the site sanitary sewer system 10'-0" outside the building.

A separate kitchen waste system shall be provided to collect the waste from all kitchen sinks and equipment that would discharge grease to the waste system. A point-of-use grease trap will be provided to receive the waste discharge at the triple pot sink. The unit at the triple pot sink will be floor recessed, PDI and ASSE approved, supplied with a flush floor access plate, and equipped with

automatic draw-off hose. Kitchen waste will be piped separately by gravity to 10'-0"outside the building. Kitchen waste and vent piping will be cast iron.

ROOF DRAINAGE SYSTEM

Roof drains will be cast iron construction, heavy duty, with flashing clamp for membrane roofing, under deck clamping device, and aluminum domes. Storm drain piping shall be cast iron and extend 10'-0" outside the building and connect to the site storm. Insulation will be applied to storm water piping and roof drain bodies to prevent condensation.

FIXTURES

Water Closets shall be institutional grade, white vitreous china, wall hung, elongated bowl, low flow (1.28gpf) type, with exposed, electronic operated, flush valve, and open front white plastic seat and self-sustaining check hinge. Urinals shall be institutional grade, white vitreous china, wall hung, low flow urinals. Child size water closets and lavatories shall be provided for the kindergarten.

Multi-sink units shall be molded synthetic stone, multi-user units with electronic mixing and metering faucets and located in the central toilet rooms for student use. Single sink units shall be institutional grade, white vitreous china, wall-hung type, with front overflow. Fixtures are to be provided with sensor operated chrome plated mixing and metering faucets, open grid drains, supplied with stops, and "P" traps.

NATURAL GAS SYSTEM

Natural gas will be brought to the building by the gas company, and include a meter and primary pressure regulator as needed on the exterior of the building. From the outlet of the meter/regulator set, natural gas piping will be extended throughout the building and serve all equipment requiring gas service. Gas pressure within the building will be low pressure, under 1/2 psig. The primary gas utilization equipment will be boilers, make-up air units, rooftop HVAC equipment, kitchen cooking appliances and central domestic water heaters.

FIRE PROTECTION SYSTEMS

FIRE SPRINKLER SYSTEM

The proposed two story new elementary school building is to be protected throughout with a combination standpipe/sprinkler system. The system shall be hydraulically calculated in accordance with NFPA requirements. Sprinkler mains shall be equipped with control valves, inspector test stations and flow switches. Sprinkler spacing shall comply with NFPA-13 requirements.

Sprinklers for areas with ceilings will be recessed type, chrome plated. Mechanical rooms, and other unfinished areas are to be provided with brass finish, exposed sprinklers, protected by sprinkler guards. Sprinklers for areas subject to freezing shall be dry type.

Areas of the building that will not be provided with wet-pipe type sprinkler protection are: the main electrical room, elevator machine room, and emergency electrical closets, which will be 2-hour rated construction.

Fire Pump and Storage Tank

The standpipe and sprinkler system will be fed by a fire pump per NFPA-20 requirements. Water will be stored in a dedicated 35,000 gallon tank below grade to supply the fire pump.

Standpipe and Fire Department Connections

The standpipes shall be located in the stairwells, and be equipped with Class 1 (2-1/2 inch) fire department valves. Fire department connections shall be provided at the east main entrance and west main entrance. The fire department connection will match Fire Department requirements.

HVAC SYSTEMS

The preliminary concept for the HVAC system described below incorporates system types that will meet or exceed current energy code requirements. Energy modeling will be used during the schematic design phase to consider selected design alternatives that would offer cost effective opportunities to optimize the overall energy efficiency of the school.

Heating will be provided to the school through a high-efficiency hot water boiler plant where hot water is distributed to rooftop air handling units, unit ventilators and to various forms of perimeter heating elements, including radiant ceiling panels in the classrooms, finned tube radiation in common areas and cabinet unit heaters and unit heaters in stairwells, corridors, vestibules and other back-of-house spaces.

Cooling will be provided primarily through the use of high-efficiency chillers to distribute chilled water to the various HVAC systems. Communications closets will be served by dedicated split systems to afford continuous operation, as needed.

The majority of spaces that will be heated and air conditioned will be served by rooftop energy recovery type air handling units that will recover energy from the building exhaust air as a way of reducing the burden of heating and cooling the required ventilation air to the school's occupied spaces. The primary exception is the renovated pre-K and Kindergarten classroom win that, due to space clearance limitations, will be served by heating and cooling unit ventilators.

The gymnasium will be heated with a rooftop energy recovery unit; the back-of-house spaces will be served by a rooftop heating and ventilating unit; the kitchen will be served with tempered make-up air by a gas-fired rooftop unit to replace air exhausted from the kitchen exhaust hoods.

The facility heating, ventilating and air conditioning systems will be controlled through a web-accessible, digital control system that will enable automatic scheduling and monitoring of the systems for the occupied spaces.

ELECTRICAL SYSTEMS

Primary electric service origination will be coordinated with the electric utility Hudson Light &Power Co., who shall provide an exterior pad mounted transformer, located adjacent to the building in close proximity to the building main electric room. The transformer will be of a liquid filled, pad mounted type with a secondary voltage of 480Y/277 volts.

The transformer secondary feeder will be terminated at the building main electrical switchboard. 277/480 volt 3 phase. The switchboard will be a dead front, front accessible, indoor type assembly rated at 277/480 volt 3 phase, 4 wire, proposed 1,600 amp rating (final size to be determined during subsequent design phase).

Interior electrical distribution transformers will be provided in each electric closet to reduce 480 volt, three phase interior distribution voltage to 208Y/120 volts for small power requirements and convenience outlets. Transformers will be general purpose energy efficient, low noise, dry type, air cooled, with indoor ventilated steel enclosure.

Branch circuit panelboards will be dead-front type, equipped with thermal-magnetic bolt-on type molded case circuit breakers. Panelboards' phase and neutral bus will be aluminum and panels will be fully rated. Where required for computer and electronic equipment protection, the panels will be provided with TVSS devices. Panels rated 480Y/277 volt, three phase, four wire, will be used for the large motors, elevators, HVAC equipment, and lighting loads. The 208Y/120 volt, three phase, four wire rated panelboards will be used for small power and convenience outlets.

Electrical branch wiring will consist of insulated copper conductors in rigid steel conduit, PVC, MC or electrical metallic tubing (EMT) as required for the installation condition. Metal clad (MC) cable typically may be used for branch circuit wiring above suspended ceiling and in dry wall partitions. Underground conduits, concrete encased conduits and conduits installed under concrete slabs will be PVC Schedule 40 with rigid steel sweeps rising out of floor slab or grade. Conduits exposed to weather will be rigid steel.

A packaged engine-generator system will be provided to supply power to life safety and standby loads upon loss of the normal utility power. The system will consist of the engine generator set in a weather-protective sound attenuated (critical grade) enclosure, emergency life-safety and stand-by automatic transfer switches, emergency life-safety and stand-by panelboards, feeders and branch circuit wiring. A 200 KW diesel-fired emergency generator is proposed, however the exact size of the unit will be determined at later design phase once all agreed loads have been determined and quantified.

In general, building interior lighting will be with fluorescent lamps. Incandescent and HID lighting will be limited to only special applications which cannot be satisfied with fluorescent type fixtures.

Fluorescent fixtures will use high performance, super T8 or compact fluorescent lamps with electronic ballasts. HID fixtures will utilize high power factor regulator ballasts.

- Classroom lighting will be direct /indirect pendant mounted fluorescent fixtures.
- Corridor lighting will consist of fluorescent, ceiling recessed fixtures.
- Dining and common areas will have fluorescent fixtures that will afford a more pleasant appearance, appropriate for the function of the respective spaces.
- The gymnasium will have high intensity fluorescent fixtures with a multi-level control switching arrangement.
- The cafetorium is a multiple function space and lighting system will be designed to accomplish the different tasks. Recessed downlights and decorative direct/indirect pendant fixtures pre-wired for multi-level lighting controls will provide proper lighting quality and lighting levels appropriate for cafeteria and performance lighting conditions. Cafetorium stage lighting will be dimmable to allow for performances and lecture presentations. The cafetorium lighting system will have controls which bring lighting to full light levels in the event of a fire alarm in the building.

The classrooms, small offices, and conference rooms will have dual technology occupancy sensors for automatic control as well as local toggle bi-level switches for manual control. Daylighting sensors/system will be used in the classrooms and rooms with skylights.

The rest of the building will be controlled by a programmable low voltage relay system. All spaces will have switches to manually control the lighting during normal building hours.

Exterior building lighting will consist of building mounted shielded fluorescent fixtures (at egress doors) and pole mounted high intensity discharge full cut-off fixtures (for parking lot, roadways and walkways). Exterior lighting will be time switched and photo-cell controlled via low voltage lighting control system. Lighting level will be approximately .5 FC minimum maintained.

An addressable fire detection and alarm system with voice capabilities will be provided to meet the requirements of Americans with Disabilities Act, NFPA and local Fire Department. The fire alarm system will consist of a fire alarm

control panel, remote annunciator, automatic smoke detectors, manual pull stations, speaker/strobe units, connections to automatic fire suppression systems, and radio type master box for transmitting alarm signals to the local Fire Department.

A hard wired building security system will be provided to protect the building from unauthorized entry. This security system will consist of a main control panel, up to five IP-based proximity readers/keypads installed at specified doors, door contact switches, three IP-based CCTV cameras installed at the two entrance doors and at the back of the building, six exterior CCTV cameras installed on the site and a video intercom at the main entry with electrified lock control in the door operation.

The system will be programmable such that upon detection of an unauthorized building entry it will transmit an alarm signal to the main office during school hours and to the local police department or the Owner's selected service during non -school hours

A clock and program system will be provided for originating and distributing time and time correction signals, and for programming and initiating audible program signals. System will consist of a master control unit, indicating clocks, and connections to the public address and music system. Master control unit will transmit time and time correction signals to all system clocks throughout the building and generate program tone signals for broadcasting over all speakers on the public address and music system.

Verizon is the telephone service provider for the existing school, and Comcast provides CATV service. The Town is in the process of installing a fiber optic cable to the school building this summer. Existing services are installed overhead from the utility poles at Route 117, and they will remain operational until new services will be made operational.

New underground conduits will be installed from the riser pole(s) at Route117 to extend communication service cables to the new demarcation room.

A voice and data distribution system will be provided consisting of Category 6 unshielded twisted pair (UTP) cabling systems and outlets for local area data network (LAN) and voice communications. A fiber optic backbone network will be provided to connect Telecommunication Rooms (TRs) to the Telecommunications Equipment Room (TER). Outlets will be provided in the classrooms, offices, library, computer lab, cafetorium, and as additionally decided. All wiring, outlets and terminations will be installed to comply with EIA/TIA 568 standards.

Wall outlets shall have EMT conduit stub-ups into ceiling space for cabling. Cables may be routed above ceiling space being grouped with distribution rings and routed though conduit sleeves in wall penetrations to the communications closets. All TRs and TERs will be connected with a backbone cabling raceway system of sleeves, j-hooks and cable trays.

A public address, music and intercommunication system will be provided consisting of an office console, microphones, amplifiers, AM/FM tuner, audio CD player, speakers, wiring, telephone paging adapter, clock/program system interface, room call switches, and classroom telephone handsets. The system will allow broadcasting of program tone signals for classroom changes, radio and CD program material, and microphone originated announcements to all areas throughout the building by individual area or on an all-call basis. Private two way communications can be established between any classroom and the office, utilizing individual classroom telephone handsets. All electronic equipment will comply with applicable Electronics Industuies Association (EIA) Standards and according to the Technology Program.

A video cabling system will be provided for the distribution of signals from the CATV service provider and/or central media distribution system to outlets located throughout the building. The system will consist of a head end equipment rack, outlets, splitters, trunk and branch cable. Outlets will be provided in all classrooms, library, computer lab, cafetorium, gymnasium and as additionally decided. All wiring, outlets and terminations will be installed to comply with Industry standards.

Wall outlets shall have EMT conduit stub-ups into ceiling space for cabling. Cables may be routed above ceiling space being grouped with distribution rings and routed through conduit sleeves in wall penetrations to the communications closets. All communication closets shall be connected with a coaxial backbone system.

Local sound systems will be provided for the cafetorium and gymnasium for sound amplification from microphone, audio CD and portable audio sources via auxiliary input jacks. The systems will provide high quality sound reproduction for use during meetings, lectures, theatrical productions and public functions, and will be interconnected with the fire alarm system so fire alarm notification circuits override the local sound system.

4.4 PERMITTING REQUIREMENTS AND TIMELINE

SITE PLAN REVIEW AND SPECIAL PERMITS

The Project will require Site Plan Approval and Special Permits from the Planning Board, per Sections 3.10, 4.2.1, and 3.8.1.10.3 of the Stow Zoning By-Law.

Per the Table of Principal Uses in Section 3.10, Site Plan Approval is required for an Educational Use in the Residential District. Special Permits are required for Building Height above 35 feet (Section 4.2.1) and Erosion Control (Section 3.8.10) for projects that clear more than 1 acre of existing vegetation.

A single application for both Site Plan Approval and Special Permits can be submitted to the Planning Board. The Board must act on the application within 90 days of the public hearing however the timeline may be extended by written agreement between the applicant and Planning Board depending on the complexity of the project.

After issuance of Site Plan Approval and Special Permits from the Planning Board there is a 20 day appeal period. If no appeals are filed within the 20 day period the decision is certified by the Town Clerk and recorded at the Middlesex County South Registry of Deeds. Once the decision is recorded the project can then apply for a Building Permit.

It is assumed that the Town, as the applicant, will participate in all public hearings and that the application for Site Plan Approval & Special Permits will be submitted at the completion of the Design Development phase.

CONSERVATION COMMISSION

The Project will require an Order of Conditions from the Stow Conservation Commission in accordance with the Wetlands Protection Act, Stow Wetlands Protection Bylaw and Article 9 (Wetlands Protection) of the Town of Stow General Bylaw.

In order to delineate the on-site resource areas subject to protection, an Abbreviated Notice of Resource Area Delineation (ANRAD) will be filed with the Conservation Commission. After a site walk and review of the ANRAD an Order of Resource Area Delineation (ORAD) will be issued by the Conservation Commission that will establish the exact limits of on-site jurisdictional areas.

A Notice of Intent (NOI) will be filed with the Conservation Commission for any work proposed within a jurisdictional area defined by the ORAD (typically within 100 feet of a wetland boundary). The Conservation Commission will

hold a public hearing within 21 days of the filing to discuss and review the project. The public hearing may be continued multiple times depending on the level of review and comments received.

The Conservation Commission will issue an Order of Conditions within 21 days of the conclusion of the public hearing process. The decision of the Conservation Commission may be appealed according to the provisions of the Massachusetts General Laws. If appealed the DEP will review the application and likely issue a Superseding Order of Conditions.

It is assumed that the Town, as the applicant, will participate in all public hearings and that the NOI application will be submitted at the completion of the Design Development phase

BOARD OF HEALTH

The Project will require a Disposal System Construction Permit from the Stow Board of Health in accordance with 310 CMR 15.000: The State Environmental Code - Title V and the Stow Board of Health Regulations for the installation of a new septic system to serve the building.

Because the Center School site directly abuts other municipal properties, including the Hale Middle School and Stow Fire Department, the Project will be required to "aggregate" all three parcels, held in common ownership, in accordance with 310 CMR 15.216. Essentially this means that the three parcels must be considered as one site with regards to wastewater treatment and disposal. Improvements to all three systems must be considered when upgrading any one system.

We will continue to work with the DEP to determine the specific aggregation and treatment requirements the Hale Middle School and Fire Department systems.

The new septic system for the Center School will include enhanced nitrogen removal in accordance with 310 CMR 15.215, because of its adjacency to the proposed water supply well for the school. The enhanced nitrogen removal is considered an alternative technology and therefore will require review by the Department of Environmental Protection (DEP).

DEP BUREAU OF RESOURCE PROTECTION

The Project will require source approval from DEP for the new on-site water supply well. The approval process is set forth in the Groundwater Supply Protection section of the Massachusetts Drinking Water Regulations (310 CMR

22.21). The new well will be considered a Non-Transient Non-Community Water System.

The DEP source approval process consists of a four step process including a Request for Site Exam, Pump Test Proposal, Pump Test Report and preparation of permit level plans and specification for the water supply system, controls and treatment system.

After source approval from DEP the well can be used as a public water supply.

MASSACHUSETTS ENVIRONMENTAL POLICY ACT (MEPA)

MEPA review is applicable to projects that receive state funding and exceed certain defined thresholds summarized in eleven defined categories. If one or more of the thresholds are exceeded, MEPA requires the filing of an ENF (Environmental Notification Form) or ENF with Mandatory EIR (Environmental Impact Report), depending on the threshold.

The MEPA threshold categories include:

- Land
- Wetlands, Waterways& Tidelands
- Water
- Wastewater
- Transportation
- Energy
- Air
- Solid & Hazardous Waste
- Historical & Archaeological Resources
- Areas of Critical Environmental Concern
- Regulations

The Project will receive state funding therefore review of the MEPA thresholds is required. At this time we have assumed that MEPA review will be required for the Project. The aggregation requirements, previously discussed in this section, will require a variance from Title V, which is one of the MEPA thresholds for Wastewater.

The Title V variance will be required for utilization of historical water use data versus DEP Design flows for the Hale Middle School. By using historical water use data the total aggregated wastewater flow will be less than 10,000 gpd thereby eliminating the need for a wastewater treatment plant to serve all three sites.

The variance from Title V threshold requires the filing of an ENF only. Typically the submission of the ENF occurs during the Design Development Phase of the project, so that the ENF includes as much information as possible regarding the Project.

STOW AND MASSACHUSETTS HISTORICAL COMMISSION

The Project will require approval from the Stow Historical Commission and the Massachusetts Historical Commission for the demolition of the existing stone apple barn located adjacent to the existing school building. Demolition of the apple barn is necessary to accommodate the new site program for the building addition.

The apple barn is currently listed on the Massachusetts Inventory of Historic Assets of the Commonwealth. Demolition of any structure listed on the Inventory requires submission of a Project Notification Form (PNF) to the Massachusetts Historical Commission (MHC).

Typically approval from the local historical commission is required prior to filing a PNF with the MHC. We have had preliminary discussions with the Stow Historical Commission regarding demolition of this structure. The Historical Commission will allow demolition of the structure provided the demolished materials including the stone, sun dial and other relevant materials are incorporated into the new building design.

The PNF will require detailed information regarding the Project, justification for the demolition of the structure and submission of plans and renderings detailing the incorporation of the apple barn materials into the proposed design. It is anticipated that after review of the PNF the MHC will issue a Determination of No Adverse Effect to Historic Assets of the Commonwealth, allowing demolition of the structure.