

## **Safety and Critical Needs Bond/ Plan** **2009-2011**

The Burlington School Department has 23 buildings on 10 campuses around the city. They range from 104 - 40 years old. This last summer the district had a facilities audit completed by Colin Lindburg and L.N. Consulting/ Engineering on September 15, 2008. This audit confirmed the district's concerns of our aging infrastructure. Many items were identified throughout this audit (Energy, Mechanical, Electrical, Life Safety, ADA, Health & Safety and Security). The district has been working on decades old deferred facilities issues over the last 7 years. The Administration made a recommendation to the Board in 2003 to have a recurring capital budget of \$750,000 to address deferred maintenance throughout the district. This ballot item was approved by the voters. However there remains a long list of deferred maintenance issues that can not be addressed with this amount and have reached a critical point (see Appendix #1 for list of completed projects).

This Safety and Critical Needs Bond is to address the most critical of the identified needs. The following projects have been reviewed by the School District Administration, School Board and the districts' architectural and engineering consultants. (See appendix #2 for the criteria.) In order to determine immediate priorities, District administrators and school commissioners, in consultation with their architectural and engineering consultants, have applied the following categories of criteria to each school property: health and safety, required mandates (federal, state and local), cost avoidance and operating budget impact, energy envelope, and service criteria. These are similar criteria used by the City of Burlington when assessing potential infrastructure repairs and improvements.

When looking at each building and the long list of deficiencies it was determined that each of the following schools projects were tied into one another. It is more cost effective to the tax payer to complete a building at a time to reap in the benefits of construction, and energy savings.

For example, to replace the boiler systems in a school without addressing the envelope of the building or not converting a boiler to hot water from steam is not cost effective.

Here is why it would not be cost effective:

To handle the load of the current building, the steam boiler system would have to be over sized, therefore wasting energy. Steam boilers are not efficient. It would not make sense to size and install a hot water boiler system that can be controlled with energy management controls in an energy efficient envelope because this would require the unit ventilators to be removed as they are designed for steam.

Existing unit vents are not efficient as the make up air has not been tempered before going through the heating coil; meaning the units are bringing in outside air to heat directly to 70 degrees or whatever the desired indoor air temperature. It would be practical to install energy

efficient roof top units at the same time that will meet today's energy requirements and meet or exceed the ASHRE standards in Indoor Air Quality.

To remove the electrical circuits from the unit vents to the electrical panels will then require us to bring the electrical up code. Installing new duct work requires the installation of duct smoke detectors as well as carbon monoxide detectors. Since the fire alarm systems are out dated and undersized they would need to be replaced.

## **Barnes Elementary School**

Barnes School was built in 1957 with an addition in 1996 for the library and a community space/classroom. The mechanical equipment includes boilers, classroom heating units and exhaust systems original to the building. The Exterior / Envelope is metal panels with single pane Plexiglas panels. There is no insulation in the wall systems. The Electrical Systems are original and is inadequate to meet the needs to use current technology in the classroom setting. The Fire Alarm system is original to the building and does not meet the current National Fire Protection Agency code (NFPA 72).

The Project consists of the following:

### **Energy/ Envelope**

New roof system with new insulation to meet or exceed the energy code requirement.

Remove current exterior wall system and replace with an energy efficient system which would include insulation, new windows that are energy efficient.

### **Mechanical Systems**

Remove steam boilers and classroom unit heaters.

Install new energy efficient boilers, roof top heating units with heat recovery.

Install new energy management controls.

### **Electrical Systems**

Upgrade Electrical panels; add new outlets in all classrooms. Address all code issues.  
Install new energy efficient lighting

Install a new Fire Alarm system that will meet the current code (NFPA 72)

### **ADA**

Install new door hardware on all exterior doors

Refurbish all bathrooms to meet the current ADA codes.

**Project Proposed Budget \$2,584,598.00**

## **Flynn Elementary School**

Flynn School was built in 1955 with three additions in 1976, 1982 and 1999. The mechanical equipment includes boilers, classroom heating units and exhaust systems original to the building. The Exterior / Envelope is metal panels and on some wings are brick with aluminum single pane windows. There is no insulation in the wall systems. The Electrical Systems are original and is inadequate to meet the needs to use current technology in the classroom setting. The Fire Alarm system is original to the building and does not meet the current National Fire Protection Agency code (NFPA 72).

The Project consists of the following:

### **Energy/ Envelope**

New roof system with new insulation to meet or exceed the energy code requirement.

Remove current exterior wall system and replace with an energy efficient system which would include insulation and new windows that are energy efficient.

### **Mechanical Systems**

Remove steam boilers and classroom unit heaters.

Install new energy efficient boilers, roof top heating units with heat recovery.

Install new energy management controls

### **Electrical Systems**

Upgrade Electrical panels; add new outlets in all classrooms. Address all code issues.  
Install new energy efficient lighting

Install a new Fire Alarm system that will meet the current code (NFPA 72)

### **ADA**

Install new door hardware on all exterior doors

Refurbish all bathrooms to meet the current ADA codes.

### **Security**

Relocate main office to control the access to the School.

**Project Proposed Budget \$3,969,331.00**

## **Smith Elementary School**

Smith School was built in 1959 with three additions in 1982. The mechanical equipment, classroom heating units and exhaust systems original to the building the boilers were installed in the late 80's. The Exterior / Envelope is metal panels and single pane windows. There is no insulation in the wall systems. The Electrical Systems are original and is inadequate to meet the needs to use current technology in the classroom setting. The Fire Alarm system is original to the building and does not meet the current National Fire Protection Agency code (NFPA 72).

The Project consists of the following:

### **Energy/ Envelope**

New roof system with new insulation to meet or exceed the energy code requirement.

Remove current exterior wall system and replace with an energy efficient system which would include insulation and new windows that are energy efficient.

### **Mechanical Systems**

Install new energy efficient roof top heating units with heat recovery.

Install new energy management controls

### **Electrical Systems**

Upgrade Electrical panels; add new outlets in all classrooms. Address all code issues.  
Install new energy efficient lighting

Install a new Fire Alarm system that will meet the current code (NFPA 72)

### **ADA**

Install new door hardware on all exterior doors

Refurbish all bathrooms to meet the current ADA codes.

**Project Proposed Budget 3,100,000.00**

## Appendix 1

### Completed Capital Projects

#### FY 2003

##### BHS

- Boiler burner controls
- New energy management controls
- New roofs on A, B, C, D, E
- New unit vents in A, B, C, D, and E
- New fire alarm System
- New doors and hardware on the ramps and some exterior doors
- Refurbished A and C Bathrooms

##### Hunt

- New boilers and controls
- New energy management controls
- New main entrance doors and hardware
- New rooftop heating unit for the library
- Replaced windows throughout the complex

##### Champlain

- New roof top unit
- New Unit vents
- New energy management controls
- New flooring throughout the building

Total Cost for this project was \$1,950,000.00

Less federal match grant \$750,000.00

Less state aid 30% \$450,000.00

**\*Total Bond to Taxpayer \$750,000.00**

#### FY 2005

##### Edmunds Elementary School

Window replacement

Repair and replace exterior ledging around the building.

Total Cost for this project was \$1,000,541.00

Less state aid 30% \$ 300,162.00

**\*Total Bond to Taxpayer \$ 750,000.00**

## **FY2006**

### BHS

New Elevator in B-Building  
Wood Chip Boiler Building

### Hunt

-Converted the boilers to hot water from steam  
-Replaced all unit vents in all the classrooms  
-Installed new piping for the heating system

Total Cost for these projects was \$3,320,816.00  
Less state aid 30% \$2,120,693.00

**\*Total Bond to Taxpayer \$ 750,000.00**

### BHS

Athletic Complex

Total Cost for this project was \$3,957,636.00  
Less state aid 30% \$ 400,790.00

**\*Total Bond to Taxpayer \$3,250,000.00**

## **FY2007**

### Edmunds Middle School

- Phase 1 Window replacement

Total Cost for this project was \$516,970.00  
Less state aid 30% \$155,091.00

**\*Total Bond to Taxpayer \$750,000.00**

## **FY2008**

### \*Edmunds Middle School

- Phase 2 Window replacements  
- Repair main entrance

### BHS

Installed new rooftop unit E-Building teachers' room.

Hunt

Installed new rooftop unit on the end of D-Wing  
New roof and insulation for the same location

Total Cost for these projects were \$753,850.00

\*Less state aid 30% \$161,654.00 Edmunds only

**\*Total Bond to Taxpayer \$750,000.00**

**The follow pages are the remainder of the schools and project list**

# **Champlain Elementary School**

Champlain School was built in 1968. The mechanical equipment includes boilers installed in 1989, classroom heating units installed in 2004. Exhaust systems and 2 roof top units are original. The Exterior / Envelope is brick with aluminum windows that need to be replaced or repaired. The Electrical Systems are original and is inadequate to meet the needs to use current technology in the classroom setting. The Fire Alarm system is original to the building and does not meet the current National Fire Protection Agency code (NFPA 72).

The Project consists of the following:

## **Energy/ Envelope**

New roof system with new insulation to meet or exceed the energy code requirement.

## **Mechanical Systems**

Install new energy efficient roof top heating units with heat recovery.

Install new energy management controls

## **Electrical Systems**

Upgrade Electrical panels; add new outlets in all classrooms. Address all code issues.  
Install new energy efficient lighting

Install a new Fire Alarm system that will meet the current code (NFPA 72)

## **ADA**

Install new door hardware on all exterior doors

Refurbish all bathrooms to meet the current ADA codes.

Upgrade current elevator.

Handicap ramp at the front entrance

## **Security**

Relocate main office to control the access to the School.

**Project Proposed Budget \$2,528,296.00**

# **Wheeler Elementary School**

Wheeler School was built in 1900 with one addition in 1968. The mechanical equipment includes boilers installed in 2006; classroom heating units and exhaust systems in the building are 42 + years old. The Exterior / Envelope is brick and block with aluminum single pane windows and wood double hung windows. There is no insulation in the wall systems. The Electrical Systems are original and is inadequate to meet the needs to use current technology in the classroom setting. The Fire Alarm system is original to the building and does not meet the current National Fire Protection Agency code (NFPA 72).

The Project consists of the following:

## **Energy/ Envelope**

New roof system with new insulation to meet or exceed the energy code requirement.

Repair/ Replace windows and replace doors

## **Mechanical Systems**

Convert steam boilers to hot water and remove classroom unit heaters.

Install new energy roof top heating units with heat recovery.

Install new energy management controls

## **Electrical Systems**

Upgrade Electrical panels; add new outlets in all classrooms. Address all code issues.  
Install new energy efficient lighting

Install a new Fire Alarm system that will meet the current code (NFPA 72)

## **ADA**

Install new door hardware on all exterior doors

Refurbish all bathrooms to meet the current ADA codes.

## **Security**

Install new security systems and install cameras

**Project Proposed Budget \$2,569,331.00**

# **Edmunds Middle and Elementary School**

Edmunds Middle School was built in 1898 with several additions in 1927 and in the 1960's. The mechanical equipment includes boilers installed in the 1980's, classroom heating units and exhaust systems original to the building with the exception of the elementary school heating units installed in the 1990's. The Exterior / Envelope is brick with new windows. There is no insulation in the wall systems. The Electrical Systems are original and is inadequate to meet the needs to use current technology in the classroom setting. The Fire Alarm system is original to the building and does not meet the current National Fire Protection Agency code (NFPA 72). ADA to this complex is non existent.

The Project consists of the following:

## **Energy/ Envelope**

New roof system with new insulation to meet or exceed the energy code requirement on B, C and D building

Replace exterior doors

## **Mechanical Systems**

Remove steam boilers and classroom unit heaters.

Install new energy efficient boilers, roof top heating units with heat recovery.

Install new energy management controls

## **Electrical Systems**

Upgrade Electrical panels; add new outlets in all classrooms. Address all code issues.  
Install new energy efficient lighting

Install a new Fire Alarm system that will meet the current code (NFPA 72)

## **ADA**

Install new door hardware on all exterior doors

Refurbish all bathrooms to meet the current ADA codes.

Install new elevators in A, B, C, Buildings

Install ADA Ramps to get into the buildings

## **Security**

Install new cameras

**Project Proposed Budget \$13,587,742.00**

## **Hunt Middle School**

Hunt Middle School was built in 1957. The mechanical equipment includes boilers installed in 2004, classroom heating units were installed in 2006 and the exhaust systems are original to the building. The Exterior / Envelope is brick with new aluminum double hung windows installed in 2004. There is no insulation in the wall systems and the brick walls are pulling from the building. The Electrical Systems are original and is inadequate to meet the needs to use current technology in the classroom setting. The Fire Alarm system was replaced in 2008.

The Project consists of the following:

### **Energy/ Envelope**

New roof system with new insulation to meet or exceed the energy code requirement.

Remove current exterior wall system and replace with an energy efficient system which would include insulation and additional new windows that are energy efficient.

### **Mechanical Systems**

Install new energy efficient roof top heating units with heat recovery.

Install new energy management controls

### **Electrical Systems**

Upgrade Electrical panels; add new outlets in all classrooms. Address all code issues.  
Install new energy efficient lighting

### **ADA**

Install new door hardware on all exterior doors

Refurbish all bathrooms to meet the current ADA codes.

**Project Proposed Budget \$3,702,117.00**

## **BHS & BTC**

BHS and BTC were built in 1964 and 1965 respectively. The mechanical equipment includes boilers installed in 1988; classroom heating units installed in 2004 and the exhaust systems are original to the building. The Exterior / Envelope is brick with aluminum / steel single pane windows systems. There is very little insulation in the wall systems. The Electrical Systems are original and is inadequate to meet the needs to use current technology in the classroom setting. The Fire Alarm system was replaced in 2004.

Project consists of the following:

### **Energy/ Envelope**

New roof system with new insulation to meet or exceed the energy code requirement on the gym and F-building.

Repair current exterior wall system.

### **Mechanical Systems**

Install new energy efficient roof top heating units with heat recovery on all buildings.

Install new energy management controls

### **Electrical Systems**

Upgrade Electrical panels; add new outlets in all classrooms. Address all code issues.  
Install new energy efficient lighting.

### **ADA**

Install new door hardware on all exterior doors

Refurbish all bathrooms to meet the current ADA codes.

Install new sidewalks

### **Security**

Install security system and cameras

**Project Proposed Budget \$ 10,481,989.00**

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