

# AUBURN SCHOOL DEPT



NEW WEBSTER GRAMMAR SCHOOL, AUBURN, ME

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## 2016 CAPITAL IMPROVEMENT PROJECTS REPORT

# Table of Contents

## **Introduction**

Proposed FY 2016 Capital Improvement Program

## **Goal 1 – Maintain Facilities**

CIP FY 2016 - 2025

McCormick Facilities Report - Cost to Buildings

AMS

ELHS

Franklin

Fairview

Sherwood Heights

Walton

RETC/SOS

Industry Ave & District Inventory

## **Goal 2 – Increase Efficiencies to Reduce Costs**

Siemens Measurement and Verification Year-3 Savings Report

VFA Asset Details Report

## **Goal 3 – Replace and/or Renovate ELHS to Address Deficiencies Outlined by NEASC & VFA**

## 2016 CAPITAL IMPROVEMENT

### Introduction

The Capital Improvement Plan for the Auburn School Department (“CIP”) for fiscal year 2016 and future years is enclosed. The documents include a ten-year spreadsheet that accounts for the needs at each school department site. Other documents are the projects for FY 16 organized by site and includes the intended source of funds. In addition, there is a section devoted to the need for a new high school.

### Long-term Goals

The Auburn School Department has many capital needs in its future. The data supplied represents the department’s needs over the next five years. The needs attempt to address the department’s three long-term goals:

1. To maintain school facilities in accordance with health and safety regulations and structural upgrades within the limits of available funds.
  - The school department was approved for its FY15 budget to spend \$3,512,020 in Facilities Maintenance. These funds meet basic needs such as repairs and maintenance, supplies and equipment and utilities costs.
  - For FY16 Capital Improvements, the school department has identified safety needs totaling \$745,500 and identified security needs totaling \$309,300.
  - All school buildings except Edward Little High School now have HVAC system. HVAC systems improve air quality and improve the quality of the learning environments.
  - The department is committed to removing asbestos and hazardous materials. The FY 16 Capital Improvement identifies two projects totaling \$175,500.
  - Due to increase in enrollment at Park Avenue, which was built for 350 and is now at 390. There is a need for the additional two classrooms that were framed in the original project design.
  - The discussion of closing an elementary school was noted in the last Master Facilities plan (2008) and during recent budget discussions due to possible budget reductions. The CIP plan identifies a possible addition at Washburn School or East Auburn School.
  - In addition to elementary needs, the department has discussed the desire to move the sixth grade to Auburn Middle School, which would require a wing to be added to the middle school in the future.
  
2. To increase energy efficiencies to reduce annual costs.
  - The school department signed a Performance Contract with Siemens in 2007. The contract guaranteed cost savings that would pay for the contract with Siemens. Some areas addressed in the Siemens’ contract were lighting retrofits, lighting sensors, boiler replacements, and building envelopes.
  - All buildings, except East Auburn School and portion of Support Services, has been converted to Natural gas, which has provided a savings in the department’s energy costs.
  - For the FY16 Capital Improvement, the school department has identified efficiency projects, which include replacing exterior doors, windows and a new electrical entrance, totaling \$3,309,650

To replace and/or renovate the Edward Little High School facility to address the deficiencies outlined in the 2009 New England Association of Schools and Colleges (NEASC) Accreditation report and the last FVA Capital Assessment Management Report.

- In the 2008 Master Facilities report Edward Little High School was identified as the highest facility need in the school department.
- Currently, Edward Little High School is sixteenth on the State Funded Construction list. There are twelve projects that have moved forward on the list and the school department is hopeful that within two years state funds will be available
- Edward Little High School was placed on academic probation by the New England Association of Schools and Colleges (NEASC), mostly due to the condition of the facilities. It had been in a "warning" status since 2006 and on actual probation since April 16th, 2009. NEASC is a commonly accepted accreditation institution that sets standards for school districts to align educational outcomes for graduates that are preparing for post-secondary attendance or for the job market.
- Accreditation looks at the overall condition of the facility to determine how it enhances learning in terms of comfort, safety, and an appropriate educational learning and living environment. It also looks at the programs that are offered.  
There are 41 major facility related deficiencies in the NEASC report (2009). Many of them are related to the facility's size. It simply is not large enough to properly serve the student population. Due to classrooms being overcrowded, classes and materials are offered in inappropriate places. Some programs simply cannot be offered due to lack of suitable space. Then there are identified infrastructure issues such as an outdated heating system, poor air quality, recurring mold issues, a severely undersized cafeteria, small locker rooms, and outdated library and media resources, to name a few.
- Edward Little has made some progress in addressing accreditation but remains on probation today. Even if Edward Little were able to address the relatively minor curriculum related deficiencies, it cannot address the significant ones as they are building infrastructure related and requires the renovation of the entire facility and the addition of 66,000 new square feet.
- This fall NEASC visited Edward Little High School for a full accreditation review and a report will be issued this spring.
- For the FY16 Capital Improvement, the school department has identified projects totaling \$2,976,000.

These are a representation of the needs that are further explained in the materials provided in the CIP school booklet.

### **Cost and Schedule**

The cost and schedule of projects is outlined on the ten-year CIP. Each year, the school department prioritizes the projects identified for a specific year based on the City Council approved CIP bonds and school allocation. When projects are not funded those items remain on the chart and the chart is revised each year. The school department also seeks other funding sources such as Qualified Zone Academy Bonds (QZAB) and Revolving Renovation Funds.

### **Maintenance on Operations**

The Auburn School Department has a strong maintenance department even though often there is more work to do than hours in the day. There are five workers that daily address the needs of the departments 11 facility sites. The building custodians complete daily work orders that are tracked to ensure requests are addressed. The Support Service Director oversees the facilities work to make sure that health and safety issues are quickly addressed. The director monitors the work of the maintenance staff, custodial staff, contracted services and facility projects.

### **Outcomes and Performance**

1. To maintain school facilities in accordance with health and safety regulations and structural upgrades within the limits of available funds.
  - The states Capital Assessment Management Program, often referenced to VFA, has been eliminated at the end of Fy14 fiscal year, as tool to assist Maine School Districts in managing their facilities. We are exploring alternative to the CAM software that will afford similar management collection and monitoring of the School's \$95 million dollar building assets. This information informs the CIP plan.
  - The school department chart showing the completion of projects, cost of project and date of completion.
2. To increase energy efficiencies to reduce annual costs.
  - The Siemens' annual executive reports detail the department's savings. The information is provided in the CIP booklet.
3. To replace and/or renovate the Edward Little High School facility to address the deficiencies outlined in the 2009 New England Association of Schools and Colleges (NEASC) Accreditation report and the last FVA Capital Assessment Management Report.
  - State funding becoming available for the ELHS project.
  - Edward Little H.S. is fully accreditation and not on probation.

### **Sustainability**

The Auburn School Department will continue to rely on City Bonds, QZAB and Revolving Renovation funds and General Funds to support its facility needs due ensuring the school department is being fiscally responsible to the taxpayers of Auburn.

# **GOAL 1**

**To maintain school facilities in  
accordance with  
health and safety regulations  
and  
structural upgrades  
within the limits of available funds.**

LOCATION/CIP PROJECTS	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FUTURE
<b>AMS</b>											
Additional 6th Grade Classrooms-wing											\$5,200,000
Classroom Furniture Replacement	\$216,500	\$-									
Fire Alarm Replacement	\$461,000										
Classroom [27] & 2 Hallways-Carpet Replacements with VCT											
Interior Door Replacement/ADA hardware-140 doors	\$231,400										
Exterior Door Replacement/Security Access Card Readers-12 doors	\$125,100										
Replacement of Freezers-refrigerant motors for Kitchen											
Fire Separation-Corridor walls	\$63,900										
Security/Surveillance Equipment upgrade/enhancement	\$-			\$205,434							
Bathroom Partitions-new fixtures		\$197,820									
Classroom Casework-27 rooms			\$590,490								
Library Casework		\$180,017									
Laboratory Casework		\$199,700									
Renewal Corridor Lockers	\$309,000	\$-									
Roof Ladder-safety cage	\$70,000										
Security - Upgrade											
Hydraulic Passenger Elevator- Renewal						\$128,830					
Toilet Partitions					\$134,864						
Public Address System								\$151,259			
Wet Sprinkler System-upgrade & new pump		\$738,808									
Telephone Upgrade- Network server/Mitel system							\$279,290				
Exterior Kitchen w/security access doors	\$13,700										
Gym Floor Replacement									\$80,935		
Chain Link Fence Lighting										\$400,146	
Renewal- Glass display Cases									\$19,888		
<b>TOTAL</b>	<b>\$1,490,600</b>	<b>\$1,316,345</b>	<b>\$590,490</b>	<b>\$205,434</b>	<b>\$134,864</b>	<b>\$128,830</b>	<b>\$279,290</b>	<b>\$151,259</b>	<b>\$100,823</b>	<b>\$400,146</b>	<b>\$5,200,000</b>

LOCATION/CIP PROJECTS	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FUTURE
<b>ELHS</b>											
ADA Accessibility / [6] B & G Bathrooms				\$1,188,000							
A & B Wing Roofing & Structural Upgrade		\$530,054									
C & D Wing Roofing & Structural Upgrade						\$274,127					
E Wing Roofing & Structural Upgrade			\$176,800								
Gym & Foyer Roofing & Structural Upgrade				\$432,900							
Bathroom Refurbishing- 3 boys-3girls	\$-	\$-									
Lighting Fixtures Renewal-T8/T5- LED	\$-						\$564,706	\$212,423			
Asbestos Removal 7 Classrooms and Hallway A&B Wing, Main Office, Guidance Area											
Parking Lot and Roadway-Renewal		\$410,200									
Resurface Gym circle & drive		\$135,000									
Music Equipment/Instruments	\$32,000										
PC Computer Lab upgrades (41 units)											
Resurface Front Entrance		\$295,000									
Major School Construction (replace ELHS) Local Only- Bifurcation Phases- Site Development/New Construction		\$9,553,000	\$51,905,000								
Tennis Court Lights		\$53,000	\$53,000	\$53,000							
Tennis Court Reconstruction	\$-	\$301,000									
New Electrical Entrance	\$481,000										
Track/Soccer Field Lighting			\$160,000		\$160,000						
Exterior Security Lighting- LED	\$-	\$-	\$-	\$-							
Interior Handrail Replacement - ADA			\$166,000	\$166,000	\$166,000						
Telephone Upgrade- Network server/Mitel system							\$279,290				
Exterior Doors (33)	\$354,000										
Security/Surveillance Equipment upgrade/enhancement	\$111,000										
New Windows & Exterior Envelop- Will required PCB Assessment	\$1,998,000	\$3,030,160									
Cellular Window Treatments			\$80,000								
Resurface/Renewal Running Track		\$150,000									
Parking Lots - Increase & Reorg for Student, Staff & Parent Parking		\$400,000	\$-								
New Heating and Ventilation & Controls		\$-	\$4,182,300								
Addition - Cafeteria, Auditorium, Library				\$6,000,000							
<b>TOTAL</b>	<b>\$2,976,000</b>	<b>\$14,857,414</b>	<b>\$56,723,100</b>	<b>\$7,839,900</b>	<b>\$326,000</b>	<b>\$274,127</b>	<b>\$843,996</b>	<b>\$212,423</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>



LOCATION/CIP PROJECTS	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FUTURE
<b>East Auburn</b>											
Parking Lot Repaving											
Remove Asbestos Floor tile-old section	\$28,500										
Repoint Chimney	\$20,500										
Repair damaged plaster wall- drywall- ceilings- 1954 wing	\$47,200										
Renew14 interior wood doors-frame/ADA hardware			\$34,140								
Renewal Asphalt Shingles										\$28,153	
Renewal single-ply Membrane- 2 sections										\$129,653	
Renewal Lighting Fixtures					\$31,797						
Telephone Upgrade						\$59,180					
Security Surveillance Renewal							\$60,189				
Carpet Renewal									\$69,615		
Phase II Addition			\$-								\$3,300,000
Public Address System									\$26,110		
Pneumatic Controls -DDC								\$400,000			
Asphalt Shingles-Renewal									\$185,000		
Lighting							\$250,000				
Single Ply Roofing Membrane Renewal										\$160,000	
Carpets Replacement w/VCT entire school		\$250,000									
<b>TOTAL</b>	<b>\$96,200</b>	<b>\$250,000</b>	<b>\$34,140</b>	<b>\$-</b>	<b>\$31,797</b>	<b>\$59,180</b>	<b>\$310,189</b>	<b>\$400,000</b>	<b>\$280,725</b>	<b>\$317,806</b>	<b>\$3,300,000</b>

LOCATION/CIP PROJECTS	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FUTURE
<b>Washburn</b>											
Phase II Addition/Gym, Classrooms, Cafeteria											\$3,000,000
Replace interior wood doors-metal frames-lever hrdwr			\$68,291								
Replace Rear Fence	\$48,300										
Lighting Fixtures Renewal-T8							\$69,208				
DDE System renewal						\$43,077					
Play Space Resurfacing	\$120,000										
<b>TOTAL</b>	<b>\$168,300</b>	<b>\$-</b>	<b>\$68,291</b>	<b>\$-</b>	<b>\$-</b>	<b>\$43,077</b>	<b>\$69,208</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$3,000,000</b>

LOCATION/CIP PROJECTS	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FUTURE
<b>Fairview</b>											
Exterior brick work- porous surfaces- sealant		\$77,769									
Student Bathrooms ADA - B & G											
Replace Interior doors/ADA Hardware-1950 wings	\$205,250										
Replace 1996 Classroom Carpets- w/ VCT	\$115,360										
Substructure Repair 1951 wing	\$175,840										
Stage Curtains Replacement	\$-										
Lighting Fixtures Renewal T8&T5		\$245,055	\$222,512								
Security System Upgrade Main/97 addition				\$61,603	\$114,890						
Telephone Upgrade- Network server/Mitel system	\$48,000										
Ceramic Tile Renewal						\$109,987					
Theater & Stage Equipment Renewal		\$42,718									
Single-ply Membrane-97 addition							\$235,512				
Exhaust System- General building							\$52,718				
Central AHU-VAV System w/distribution								\$776,040			
Gym Equipment Renewal		\$35,710									
Single Ply Roofing Membrane							\$458,600				
Student Lockers										\$437,209	
Aluminum Windows Renewal									\$265,072		
<b>TOTAL</b>	<b>\$544,450</b>	<b>\$401,252</b>	<b>\$222,512</b>	<b>\$61,603</b>	<b>\$114,890</b>	<b>\$109,987</b>	<b>\$746,830</b>	<b>\$776,040</b>	<b>\$265,072</b>	<b>\$437,209</b>	<b>\$-</b>

LOCATION/CIP PROJECTS	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FUTURE
<b>Park Ave</b>											
Security Surveillance upgrades-Cameras	\$25,000										
Vinyl Sheet goods-Renewal		\$40,656									
Two Additional Classrooms											\$400,000
Window Shades	\$44,478										
Emergency Battery Backup		\$37,539									
Exit Signs		\$32,073									
Replace Sheet Vinyl Goods w/tile		\$40,655	\$-								
Security/Surveillance Equipment upgrade/enhancement			\$78,985								
Public Address System Renewal									\$96,415		
Fence Chain Link										\$49,376	
<b>Total</b>	<b>\$69,478</b>	<b>\$150,923</b>	<b>\$78,985</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$96,415</b>	<b>\$49,376</b>	<b>\$400,000</b>

LOCATION/CIP PROJECTS	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FUTURE
<b>Sherwood Heights</b>											
Exterior Security lighting - Phase II											
Renewal Exit Signage & Emergency Lights	\$31,500										
Fire Alarm Upgrades-1968 Section		\$148,874									
Stage Curtains Replacement											
Telephone Upgrade- Network server/Mitel system	\$48,000										
Theater & Stage Equipment		\$39,432									
Ceramic Tile Renewal 97 addition							\$250,000				
Lighting Fixtures Renewal T8&T5			\$197,934	\$268,845							
DDE System renewal			\$154,460								
Single-ply Membrane-97 addition						\$458,337					
Carpet Renewal 97 addition w/VCT					\$128,520						
Central AHU-VAV System w/Distribution						\$1,232,131					
Wheelchair Lift Renewal							\$47,188				
Replace Original Exterior Doors-upper-lower entrances		\$43,100									
Roof Renewal A & B Wing					\$150,000	\$150,000					
Single-ply Membrane Renewal -97 addition							\$437,209				
Carpets Renewal - 3 pods								\$360,000			
Student Lockers Renewal									\$45,000		
<b>TOTAL</b>	<b>\$79,500</b>	<b>\$231,406</b>	<b>\$352,395</b>	<b>\$268,845</b>	<b>\$278,520</b>	<b>\$1,840,468</b>	<b>\$734,397</b>	<b>\$360,000</b>	<b>\$45,000</b>	<b>\$-</b>	<b>\$-</b>



LOCATION/CIP PROJECTS	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FUTURE
<b>RETC/SOS</b>											
Exterior Parking Lot/Security Lighting											
Renew Concrete Window Sills	\$30,000										
New DDC Controls System- Renewal					\$56,545						
Single-ply Membrane renewal						\$72,059					
Lighting Fixtures Renewal-T8			\$109,394	\$69,208							
Perimeter Heat System-Fin Tube/unit Heaters				\$146,830							
Parking Lot Expansion/resurfacing			\$90,848								
<b>Total</b>	<b>\$-</b>	<b>\$-</b>	<b>\$90,848</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>

LOCATION/CIP PROJECTS	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FUTURE
<b>Support Services Building</b>											
System Security Surveillance Upgrade-Network Components	\$34,600					\$16,930					
Emergency Lighting-Exit Signs		\$13,630									
One Ton P/U (replace 2002 1/2 ton) for Sanding			\$48,000								
Upgrade fire Alarm System											
Renewal 2 Exterior Steel Doors	\$10,000										
Parking Lot Resurfacing/Drainage Improvements							\$261,600				
One Ton P/U with Plow (replace 2003 3/4 ton Dodge)	\$42,000										
One Ton Truck With Plow (replace 2004 1 ton GMC)		\$48,000									
One Ton Truck With Plow (replace 2005 1 1/2 ton GMC)					\$50,000						
One Ton Truck With Plow (replace 2006 1 ton Ford)			\$52,000								
One Ton P/U With Plow (replace 2008 3/4 ton Ford)				\$45,000							
Floor Finishers/Strippers/Buffers/Vacuums											
Lighting Fixtures Renewal T8			\$88,342	\$116,742							
District Lunch Walk-in Freezers & Refrigerator-Motors Replacement											
<b>TOTAL</b>	<b>\$86,600</b>		<b>\$188,342</b>	<b>\$161,742</b>	<b>\$50,000</b>	<b>\$16,930</b>	<b>\$261,600</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>	<b>\$-</b>

<b>GRAND TOTAL CIP</b>	<b>\$6,181,838</b>	<b>\$18,017,975</b>	<b>\$58,739,872</b>	<b>\$8,860,724</b>	<b>\$1,085,826</b>	<b>\$2,572,598</b>	<b>\$3,345,509</b>	<b>\$1,999,722</b>	<b>\$888,035</b>	<b>\$1,304,537</b>	<b>\$12,300,000</b>
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*“Vestigia Nulla Retrorsum” – “No Steps Backward”*

The Auburn School Department is at what many deem to be a critical juncture in regards to the delivery of educational programs to the many varied learners and taxpayer interests of the Auburn community.

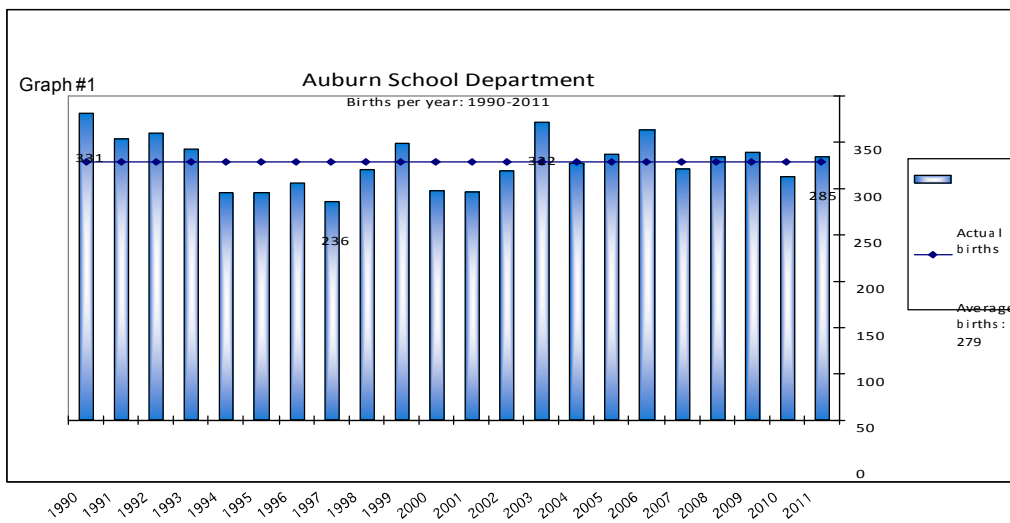
### **Some historical perspective:**

*Resident population:* The City of Auburn, settled in 1736, has benefited from steady growth since its incorporation in 1842. Since 1850, when the US Census Bureau performed its first national census, the resident population of Auburn has experienced double digit growth in each of the census ten year periods for the ensuing 100 years until the 1970 report when it saw its first decline. The population has remained statistically stable since 1960 and is currently at 23,055 residents according to the 2010 census.

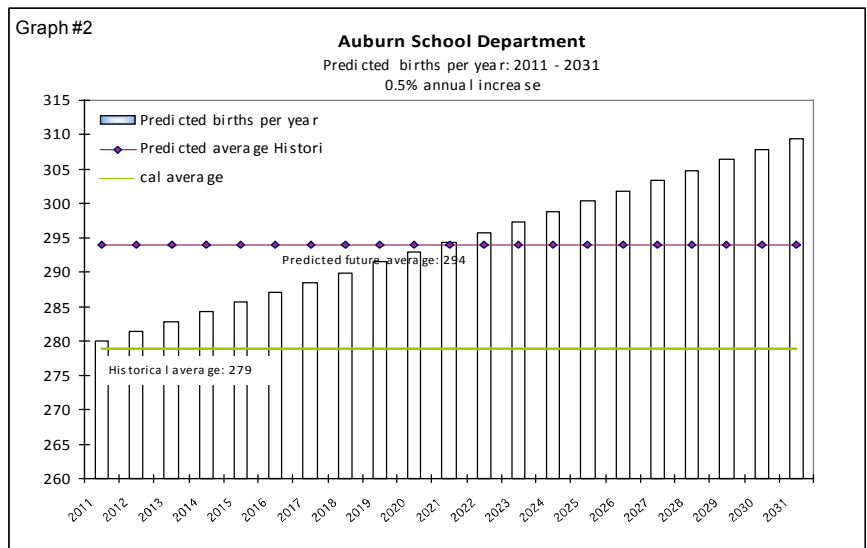
*In the opinion of McCormick Consultants, there appears to be sustained economic activity in the greater Lewiston-Auburn area. Currently, some have indicated that a “renaissance” is occurring. Without question, the two cities are experiencing growth as measured by differing barometers that is greater than the rest of the state and the national average, even during the latest economic downturn. It is predicted that this growth will continue and just as likely that this growth will, at the very least, lead to constant educational space needs over the next 20 years.*

*Births:* Resident birth history is a succinct method to determine future school enrollments. Auburn resident births have been reasonably steady over the last three decades ranging from a high of 331 in 1990 and reaching a low of 236 in 1997. [Graph #1]

Since 1990, the average of resident births is 279. Over the last five years, resident births have increased slightly to an average of 285. There is a perception that births have increased recently, which is confirmed. However, when reviewing birth data over the last 30 years, we observed repeating 3-5 year cycles where the births reach a high for a certain period and then retreat slightly some 3-5 years later. Auburn has experienced six such cycles since 1990. When compared to the 30 year average, the latest five year trend is six births per year above the 30 year average, thus confirming the perception of increased birth rates. It will be interesting to see if the cycle repeats itself as the latest spurt is now in its third year.



*In the opinion of McCormick Consultants, today's base of 280 annual births plus a minimum 0.5% (one half of one percent) annual increase should be anticipated and used for school facility planning purposes for the next 10 & 20 years. This annual increase would add 14 new students per grade at year 10, and 29 new students per grade at year 20. Total school district enrollment would increase by 188 at year 10, and 385 at year 20. [Graph #2]*



*At this projected rate of growth, and using a 20-1 student to teacher ratio, 10 additional classroom spaces would be required 10 years from now and 10 more classrooms 20 years from now. A total of 20 additional properly sized and configured classrooms will be needed than exist today.*

Student population: The attending student population, overtime, has similarly mirrored the resident population and birth history in that it has been statistically stable. Since 1990, total student population ranged from a high of 4,258 in 1992 to a low of 3,454 in 2005. The average over this time period is 3,820. In 2011, the enrollment is only 4% below the 21 year average. [Graph #3]

According to available records dating back to 1983, the largest district student population was in 1983 when 4,311 students were enrolled. Enrollments began to drop after 1983. Even though the general population has statistically remained steady, the student population has increased back to 3,668 students this year, showing slight increases in each of the last five years.

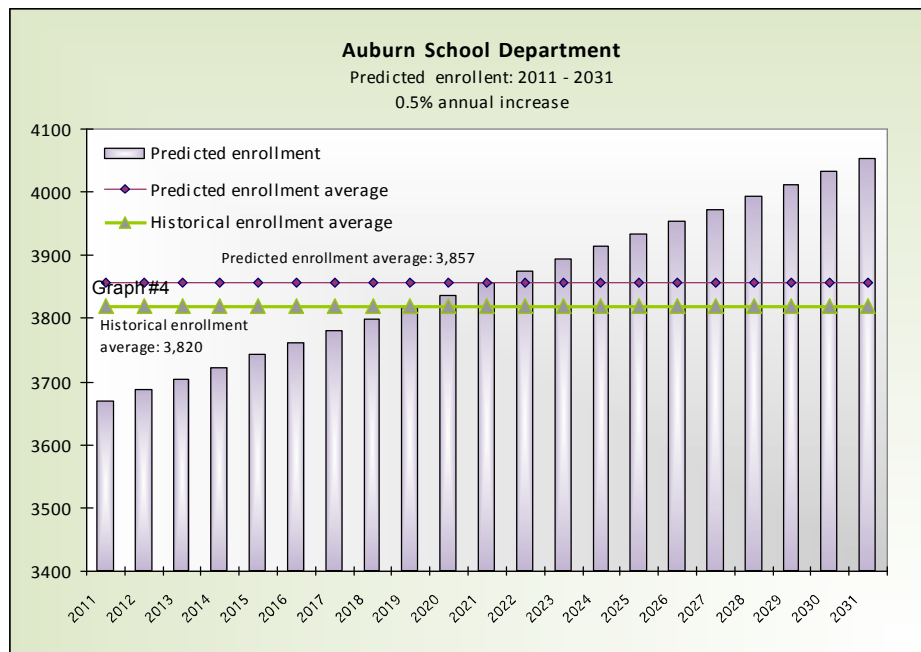
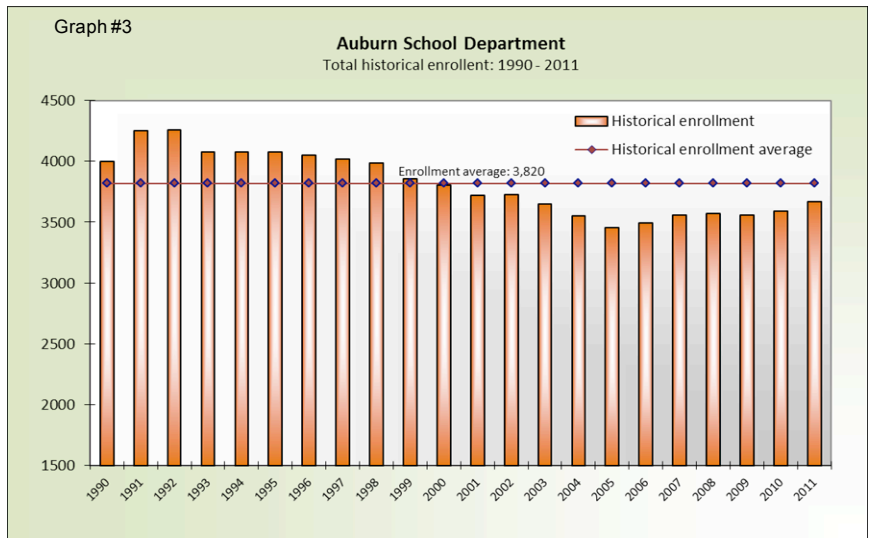
It is important to note that during the years of greatest enrollments, the district had 6 more school buildings than it does today.

Analysis of the enrollment data is somewhat complicated by the fact that until 2000, the communities of Mechanics Falls, Minot, and Poland attended Edward Little for grades 10-12 and 9<sup>th</sup> grade at Walton School. Approximately 400 students left over the ensuing years when the Poland Community High School was constructed. Of interest, however, is that the latest 21-year enrollment

average is the same as the last year these communities attended Edward Little.

Some of the student enrollment growth is due to the addition of new school offerings (pre-kindergarten), an “in migration” of students from closed private schools, “in migration” of formerly home schooled students, and slight birth increases. It should be noted that currently, only 150 of the potential 280 pre-kindergarten students attend the public schools due to space limitations and school policy.

*In the opinion of McCormick Consultants, the Auburn School Department will, at a minimum, maintain the current student enrollment with at least a 0.5% (one half of one percent) annual increase over the next 20 years. Should the School Department decide to enroll all eligible PK students, and/or increase offerings to other “non-traditional” learners such as worker retraining, adult education, or post-secondary degree programs, a 5-8% increase could be experienced over the same 20 year period.* [Graph #4]



History has shown that Auburn has grown and prospered over time. Though there have indeed been some “tough” times, all studied indicators show that Auburn will continue to grow.

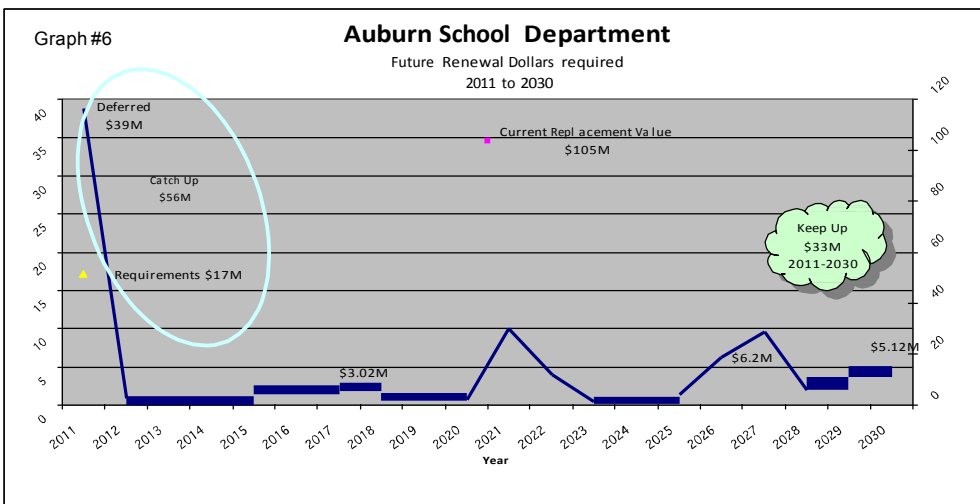
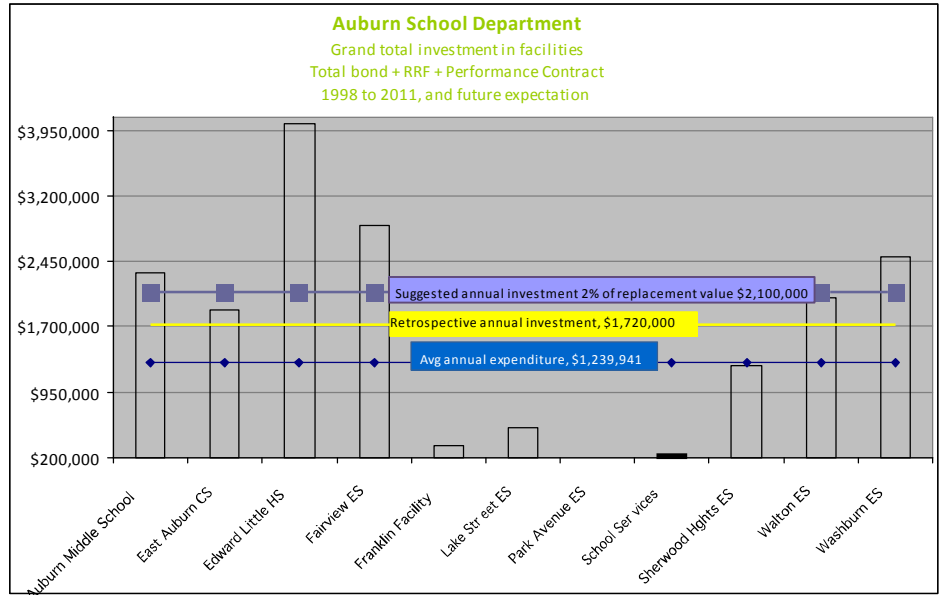
*Consultant’s Conclusion: The current Auburn School Department facilities are not capable of providing sufficient appropriate learning spaces now and into the future. The community of Auburn should plan ways to expand educational spaces to best provide learning for all of its residents. It can afford*

*to, and must do so, if it wants to continue to survive and thrive.*

**Capital Renewal Investment:** Capital re-investment to keep buildings in good operating order is essential. Without it, buildings will inevitably fall into disrepair or unacceptable conditions in terms of safety, comfort, and a good place for learning to take place. Capital renewal often takes last place in a school budget. Understanding capital renewal may not be obvious to some because it tends to get deferred until something catastrophic occurs like a roof leaking or a boiler no longer operational.



Beginning in 1998, Auburn has been able to fund capital renewal annually at a greater amount than in previous years and has upheld it since then. The annual amount expended has averaged \$1,239,941. Even though this amount seems like a large number, and it is, it has not been enough to keep the buildings from falling further behind. Based on replacement value of the buildings, Auburn should have been spending \$1,720,000 over the same time period. This indicates that there was a large deficit prior to the new expenditures. Based on today's current replacement value of the districts building inventory, the district should be spending \$2,100,000 [Graph #5].



Basically, this suggests that the district is falling behind at a rate of nearly \$1,000,000 per year. At this rate, the capital needs will never get caught up as there is \$56 million of deferred renewals now and \$33 million more looking forward 20 years. [Graph #6]

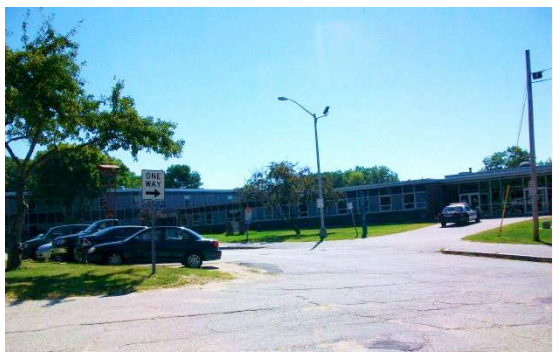
Edward Little:



There has been a high school in Auburn since 1834 when the Lewiston Falls Academy was constructed on the corner of Academy and High Streets. It became known as Edward Little in 1849 as a result of the support given to it by one of its incorporators, a fellow named Edward Little, for his forward vision and support for education. The school was expanded twice over the next 110 years to



accommodate population increases and newer educational teaching trends of the day. In 1874, ownership of the school was transferred from a chartered corporate entity to the City of Auburn. A condition of the transfer was that it forever be named Edward Little.



With the continued population growth in the area, and the baby boom that was beginning to develop in the 1950's, the Great Falls location was no longer able to provide adequate space and was outdated. The current Edward Little building on the Auburn Heights location was constructed and occupied in 1961. Once again, the overcrowding, facility condition, and changes in instructional techniques prompted the need for a new facility.

According to reports, the “proposed” originally designed Edward Little was never constructed. After three defeated referendums, a compromise in the size and cost was reached. It did not include enough classroom space or a gym, the cafeteria was too small, and other attributes normally found in schools were left out. The school was constructed for \$1.9 million. Four years after the main building was constructed, a gymnasium was added. In 1998, a classroom wing was added.



A long term facility master plan and vision perhaps could have aided the community to make decisions that would have avoided the later construction projects and perhaps diminished the impact of the current accreditation situation.

Accreditation: Edward Little High School has been placed on academic probation by the New England Association of Schools and Colleges (NEASC), mostly due to the condition of the facilities. It has been in a “warning” status since 2006 and on actual probation since April 16<sup>th</sup>, 2009. NEASC is a commonly accepted accreditation institution that sets standards for school districts to align educational outcomes for graduates that are preparing for post-secondary attendance or for the job market.

Accreditation looks at the overall condition of the facility to determine how it enhances learning in terms of comfort, safety, and an appropriate educational learning and living environment. It also looks at the programs that are offered.

There are 41 major facility related deficiencies in the NEASC report (2009). Many of them are related to the facility's size. It simply is not large enough to properly serve the student population. Due to classrooms being overcrowded, classes and materials are offered in inappropriate places. Some programs simply cannot be offered due to lack of suitable space. Then there are identified infrastructure issues such as an outdated heating system, poor air quality, recurring mold issues, a severely undersized cafeteria, small locker rooms, and outdated library and media resources, to name a few.

Edward Little has made some progress in addressing accreditation but remains on probation today. Even if Edward Little were able to address the relatively minor curriculum related deficiencies, it cannot address the significant ones as they are building infrastructure related and requires the renovation of the entire facility and the addition of 66,000 new square feet, at a recently estimated cost of \$49 million. The same report estimated the cost of an entirely new high school to be \$61 million (not including site acquisition and development costs).

Of course Edward Little is not the only concern facing the School Committee.

<sup>35</sup><sub>17</sub> Some of the other buildings are old, and are in poor or declining condition.

<sup>35</sup><sub>17</sub> There is \$56 million of identified deferred capital renewal needs (“catch up”) in the district.

<sup>35</sup><sub>17</sub> The future cost of keeping the buildings over the next 20 years (“keep up”) is another \$33 million.  
<sup>35</sup><sub>17</sub> Total capital cost to “catch up” and “keep up” for the next 20 years is \$89 million.  
<sup>35</sup><sub>17</sub> Failure to provide appropriate capital renewal on an annual basis will surely cause the buildings condition to continue to decline.  
<sup>35</sup><sub>17</sub> Energy and maintenance costs are higher than newer buildings.  
<sup>35</sup><sub>17</sub> Educational dollars are harder and harder to come by. The District must find means to use available dollars more efficiently.  
<sup>35</sup><sub>17</sub> The district applied for construction funding assistance from the MeDOE last year and was not successful.  
<sup>35</sup><sub>17</sub> All of the schools are at size capacity for the number of students attending them. There are instances of student-teacher ratios greater than the desired ratio of 20-1. There simply is no room for enrollment growth without compromising the quality of teaching.  
<sup>35</sup><sub>17</sub> Some of the school buildings are not organized acceptably to deliver education for today’s standards.  
<sup>35</sup><sub>17</sub> There are inequities within the elementary buildings in terms of offerings due to space.  
<sup>35</sup><sub>17</sub> Most of the buildings are not designed for learning in terms of the future, some of which we don’t even know yet, or techniques that cannot be employed due to configurations.  
<sup>35</sup><sub>17</sub> The buildings do not support the Vision 2020 for the future of education for the Auburn community.

## **Process:**

Community stakeholders and process: On August 17, 2011, the Auburn School Committee voted to employ McCormick Facilities Management to assist it in updating its long-term strategic facility plan. A voluntary committee representing community stakeholders with an interest in Auburn education was solicited to meet with representatives of the Auburn School Department and McCormick Facilities Management. This committee met six times in the subsequent months, completed reviews of much statistical data, conducted research, participated in two public hearings, placed documents on the school’s website, and utilized technology such as GoogleDocs and email for shared communications to carry out its mission.

The committee was asked to formulate their vision for education in the future. What would they like to offer in terms of education for learners that represents state of the art teaching and learning techniques and the infrastructure needed to support it? What vision can they perceive to provide quality education in the 21<sup>st</sup> century? They were asked to think out of the box as to what facilities should be like to provide 21<sup>st</sup> learning, devoid of emotion, politics, and special interests. How could costs be contained in light of diminishing funding?

It is important to note that the Auburn School Department has had an actionable long-term facilities plan since at least 1980. As with any long-term plan, it must be reviewed and adjusted periodically. Things change. Building conditions change, finances change, and more significantly, the need to educate learners continually changes. As such, long-term plans must change to keep pace.

It may appear that this nine week overall process has been too short for such a significant outcome. This effort would not have been possible without previous committee efforts and the significant amount of data that already exists. This process was only possible in this time frame because of the good work of previous stakeholder committees, School Board members, and volumes of data that exists.

However, there is a point of much more substantial importance that must be understood by all. This abbreviated process is only the beginning of a much longer one that needs to occur. This phase was to involve the community in early discussions to gauge the interests of the community to determine

how it would like to move forward in regards to caring for the school facilities AND with providing educational facilities for the future. This first step of the process was to assist the Board to determine what, if any, new ideas may come about as a result of the committee's deliberations in light of the failed funding assistance sought by the Board from MeDOE last year.

The work of this committee is now over with the delivery of this report. A new committee should be formed immediately to continue the planning and to determine a way to implement the recommendations of this committee.

Clearly, addressing accreditation and the needs of Edward Little is of the utmost importance to the community. A clear understanding of the accreditation needs must be achieved. It simply is not just the expenditure of a few dollars. According to the work of Harriman Associates for the major capital application last year, renovating and adding 66,000 square feet of new space is needed to satisfy NEASC. The cost was estimated to be \$49 million. If this scenario is chosen, it would still be an old renovated school with some new space and would not be particularly well arranged for future education delivery methods. Constructing an all new facility was estimated to cost \$61 million (not including site acquisition costs) and be located on a site to be determined.

Edward Little should be the springboard to lead future efforts for developing new facilities that best serve the educational needs of Auburn. What to do about Edward Little must first be decided before any other capital plans are implemented. If a single campus is desired over time, it must begin by addressing the needs of the high school. Whatever decision is reached for Edward Little will impact all other facility decisions for the following 30-40 years, at which point all other activities will likely necessarily be stopped.

## **Recommendations:**

*McCormick Facility Management Consultants is suggesting that a new community facility stakeholders committee be formed immediately; January 2012 at the latest.*

*The following is a possible timeline for the newly formed committee:*

<sup>35</sup><sub>17</sub> *The committee should represent a good cross section of community. It should include residents, city council members, and school committee members. It should include school administrators and staff as ex-officio members.*

<sup>35</sup><sub>17</sub> *The committee should meet regularly: at least monthly.*

<sup>35</sup><sub>17</sub> *Likely, the services of an outside consultant will be required to assist with the technical aspects and group facilitation, and should be employed.*

<sup>35</sup><sub>17</sub> *Campus options should be developed and thoroughly explored.*

<sup>35</sup><sub>17</sub> *At least three public hearings should be conducted to seek input and distribute its work to date to the public at large.*

<sup>35</sup><sub>17</sub> *A non-binding straw poll vote should be held in November 2012.*

<sup>35</sup><sub>17</sub> *Based on the public input and straw poll results, the committee could move forward to implement the strategic vision. If the support is not there, then they could continue to develop plans until community support is achieved.*

If this time frame were successful, the earliest students would be graduating from a new high school would likely be 2015. This is four more years of graduating students from a probationary accredited school!

Vision 2020 was a guiding document. Potential components of a facility vision were suggested. Community feedback was solicited. Data concerning folks, facilities, and finance were analyzed. At least a dozen possible solutions were considered, with five identified for in-depth review.

Based on the discussions, public hearings, and input from many, the following is the recommendation of this committee:

Create a “Comprehensive campus for community & life-long learning”. The concept is that over time, all Auburn public education would take place on a single campus. It would not be one large building housing the entire student population but likely would have several buildings serving different grade levels and educational needs.

The new campus could have a performing arts auditorium, ice arena, all athletic fields at one location, and many features that the school department and community currently do not have.

This recommendation would likely be performed in steps, or phases. The possible steps have been tentatively identified in the following. Each step is a go/no-go step. Work continues as each step is successfully accomplished. If not successful, the process stops.

Phase 1 **Site/Concept Committee**

1. Review and follow the steps as outlined in the State of Maine Board of Education-Chapter 61, Rules for Major School Construction Projects.
2. Begin discussions to determine where land can be acquired and at what cost, with sufficient acreage for a single campus concept.
3. Design the campus in concept only for community discussion and cost estimating.
4. Secure tentative funding commitments.
5. Secure any necessary permits and approvals.
6. Design and construct a new high school.
7. Include planning to expand the middle school to accommodate grade 6.

Phase 1  
1-7 years

Additional Phases (after Phase 1)

Phase 2  
7-12 years

8. Determine elementary needs.

Phase 3  
12-20 years

9. Determine other district needs.

This time line represents a 20-year time frame to get to a single campus. If at any time during the 20-year time line, conditions change, the plan can change. If the student population reverses or economic conditions change, then the plan can be put on hold or adjusted. The remaining buildings will still be in the school departments' inventory during this time and can be utilized until they are no longer needed.

This is truly a long term vision. It addresses so many current needs in the district. It creates much efficiency which will reduce operating costs as compared to not doing anything. It allows for flexibility and expandability. It can start and stop anytime to accommodate changing educational needs along the way.

***Consultant's conclusions:***

*The community of Auburn and its School Department are at a time and place where something must be done to some, if not most, of its school buildings. Edward Little High School is on probationary status by its accreditation services provider. All of the elementary buildings except Park Avenue do not provide all of the appropriate spaces for today's desired curriculum. Some of the elementary buildings cannot teach certain programs such as creative or performing arts, physical education, or music for lack of suitable*

*instructional space. The elementary schools do not all offer the same programs, which is inequitable. The Middle School is not a true middle school as it consists only of grades 7-8 and not 6-8. There are no available rooms for any increase in student population. The District has a hefty deferred capital renewal for its aged buildings of nearly \$56 million dollars. Additionally, another \$33 million will need to be expended over the next 20 years to keep the buildings in acceptable condition. Most of the buildings are not energy or operationally efficient.*

*To be certain, there are many issues to be addressed.*

*The challenge is to figure out how to resolve the many issues and needs with finances seemingly more difficult to obtain.*

*The 120 year old model for education still being utilized today is no longer viable. The days of neighborhood schools are outdated. It matters little what size the school is but more what the school offers and how its programs are delivered. How the school building performs in terms of comfort, safety, air quality, lighting, and other factors are far more important than size. How teachers are prepared and the tools they have to work with are what matters most.*

*Tomorrow's schools need to be flexible and expandable. They must provide for changing technology with little effort. Appropriate spaces for each program must be available for each age group, ability, and curriculum of the day. Kids need room to do their projects and store them for the next day. Band needs a room where it can make all the noise it wants and not disturb the classrooms next door. Creative art needs room for paint and clay and kilns and storage of works in progress. Performing arts need a place to build props and store them as well as dressing rooms and play rehearsal space. All schools should have gymnasiums with high ceilings so students can shoot a basketball and play games and exercise. Modern laboratories are needed to conduct actual experiments in real time, not just read about them from a book. Libraries and media centers need to have computers and fast broadband for downloading research materials. Learners of all ages need a place to learn and better themselves as lifelong learners.*

*Lastly, the importance of technology cannot be stressed enough. Every part of our lives today is impacted by technology. Technology will be even more prevalent in the coming years, in learning as well as living.*

*The Auburn School Department cannot address all of its needs simultaneously in the wake of so many insufficiencies. Simply addressing the deferred capital needs alone is more than the district can afford. At its current rate of capital expenditures, it will never get caught up. And if only its current building needs are addressed, then modernization will not be able to occur. If the student population expands, the district will have to find space somewhere to accommodate them.*

*The creation of a single campus for learning is becoming very common across the nation and in our own state. Reducing redundancies and keeping schools nearby is good for kids, parents, staff, and the taxpayer. Young children will look forward to going to the same campus each year. They will take pride in it. All learners will have the same opportunity to broaden their*

*horizons. Operational costs will be reduced and over time, less expensive, than caring for the current aged facilities, some nearly 100 years old.*

*The community has an opportunity now to create something unique and forward thinking in terms of providing education and training for all of its residents well into the future.*

*Auburn can afford it; it is a matter of priorities. And what matters more than providing an outstanding education for your children and all learners in the district?*

*“Vestigia Nulla Retrorsum” – “No Steps Backward”*



**AMS**

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:

Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Classroom furniture**

**Project Location: AMS**

**Project Justification: This is phase II of classroom furniture renewal. Furniture is 38 years old and chairs are showing metal fatigue.**

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule		
	Cost	Check One	Check One	Percent	
<b>Planning/Engineering:</b>			<b>Current Revenues</b>	<b>FY15</b>	
<b>Acquisition:</b>	\$216,500	√	<b>G.O. Bond</b>	√ <b>FY15</b>	100%
<b>Construction:</b>			<b>Reserve</b>	<b>FY16</b>	
<b>Other:</b>			<b>Special</b>	<b>FY15</b>	
			<b>Assessment/Fee</b>	<b>FY15</b>	
<b>Total Estimated Cost (annually):</b>	\$216,500		<b>Grant (identify)</b>	<b>FY15</b>	
<b>Source of Estimate:</b>			<b>Other (identify)</b>	<b>FY15</b>	

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed: It is a matter of safety for students and staff. Aging and failing equipment. Whatever furniture is salvageable, we will offer for sale via City's auction for disposal.**

Proposed Budget  
Classroom and  
Instructional  
Furniture Equipment  
AMS  
Auburn, Maine

1/17/14

**TOTAL FUNDS REQUIRED**

**433,000**

**Administrative Cost & Reserve**

Advertising & Legal Cost	1,000
Bid Contingency	18,000
Construction Contingency	18,000

Subtotal	37,000
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**Fees & Services**

Engineering	36,000
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Subtotal	36,000
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**Construction**

New Classroom desks/chairs	
Staff desks/chairs	360,000
New instructional tables/chairs	
Furnishings for Music, Art,	

Subtotal	360,000
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# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Fire Alarm Renewal**

**Project Location: AMS Entire School**

**Project Justification: Current system is 35 years old and replacement parts are obsolete. Our VFA system has noted this as a school deficiency and already beyond renewal time.**

Cost Estimate	Proposed Funding		Proposed Fiscal	
	Cost	Source	Year	Schedule
	Cost	Check One	Check One	Percent
Planning/Engineering:		Current Revenues		FY15
Acquisition:		G.O. Bond	√	FY15 100%
Construction:		Reserve		FY16
Other:		Special		FY15
		Assessment/Fee		FY15
<b>Total Estimated Cost (annually):</b>	\$461,000	Grant (identify)		FY15
<b>Source of Estimate:</b>		Other (identify)		FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

Proposed Budget FY16  
For  
New Fire Alarm  
Auburn Middle School  
Auburn, Maine  
  
January 9, 2014

**TOTAL FUNDS REQUIRED** **461,000**

**Administrative Cost and Reserve**

Advertising & Legal Cost	1,000	
Bid Contingency	19,000	
Construction Contingency	19,000	
Subtotal		39,000

**Fees and Services**

Engineering Fees	38,000	
Subtotal		38,000

**Construction**

Demolition	5,000	
VFA Construction Estimate	389,000	
Subtotal		384,000

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
 Fiscal Year: Fy15-16

Project Title: FY 15 - CIP -

Department: **Auburn School Department**

Project Description: Interior Doors Renewal

Project Location: AMS Entire Classrooms Entrances

Project Justification: Current doors do not meet life and safety code or school security protocol. It would also allow for ADS door hardware to be installed and lockable doors.

Cost Estimate			Proposed Funding Source	Proposed Fiscal Year Schedule	
				Check One	Percent
Planning/Engineering:			Current Revenues	FY15	
Acquisition:		√	G.O. Bond	FY15	100%
Construction:			Reserve	FY15	
Other:			Special	FY15	
			Assessment/Fee	FY15	
Total Estimated Cost:	\$231,400		Grant (identify)	FY15	
Source of Estimate:			Other (identify)	FY15	

Impact on Operating Costs:

Other related City Projects:

Alternatives/impacts if the project is not funded or completed:

Proposed Budget FY16  
For  
New Interior Doors and ADA Hardware  
Auburn Middle School  
Auburn, Maine

January 9, 2014

**TOTAL FUNDS REQUIRED** **231,400**

**Administrative Cost and Reserve**

Advertising & Legal Cost	1,000	
Bid Contingency	9,500	
Construction Contingency		9,000
Subtotal		20,000

**Fees and Services**

Engineering Fees	19,000	
Subtotal		19,000

**Construction**

Removal and disposal of Existing Doors and hardware (140 doors)	7,000	
New Interior Wood Doors (140 doors), ADA Hardware and double cylinders	168,000	
New Master keyed System	9,500	
Painting (3 coats per doors)	7,900	
Subtotal		192,400

Proposed Budget FY16  
For  
New Exterior Doors with Security Card Access  
Auburn Middle School  
Auburn, Maine

January 9, 2014

**TOTAL FUNDS REQUIRED** **125,100**

**Administrative Cost and Reserve**

Advertising & Legal Cost	1,000	
Bid Contingency	5,000	
Construction Contingency		5,000
Subtotal		11,000

**Fees and Services**

Engineering Fees	10,000	
Subtotal		10,000

**Construction**

Demolition and Disposal 12 Exterior Door openings	6,000	
New Exterior HM Doors, Frames and Hardware	61,000	
Security Access Card Readers	33,000	
Painting	4,100	
Subtotal		104,100



Proposed Budget FY16  
For  
New Exterior Kitchen Door  
Auburn Middle School  
Auburn, Maine

January 9, 2014

**TOTAL FUNDS REQUIRED** **16,300**

**Administrative Cost and Reserve**

Contingency	1,300
Subtotal	1,300

**Fees and Services**

Engineering Fees	1,300
Subtotal	1,300

**Construction**

Demolition, New Door, frame, Hardware, Card Reader & Painting	13,700
Subtotal	13,700

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Fire Separation Corridor Walls**

**Project Location: AMS West & East Wing**

**Project Justification: Current hallwall walls do not meet current life and safety code. Our VFA has identified this as a deficiency and should be addressed.**

Cost Estimate	Proposed Funding		Proposed Fiscal	
	Cost	Source	Year	Schedule
	Cost	Check One	Check One	Percent
Planning/Engineering:		Current Revenues		FY15
Acquisition:		G.O. Bond	√	FY15 10%
Construction:		Reserve		FY16
Other:		Special		FY15
		Assessment/Fee		FY15
<b>Total Estimated Cost (annually):</b>	\$6,900	Grant (identify)		FY15
<b>Source of Estimate:</b>		Other (identify)		FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

Proposed Budget FY16  
For  
Fire Separation above Corridor Walls  
Auburn Middle School  
Auburn, Maine

January 9, 2014

**TOTAL FUNDS REQUIRED** **63,900**

**Administrative Cost and Reserve**

Advertising & Legal Cost	1,000	
Bid Contingency	2,600	
Construction Contingency		2,600
Subtotal		6,200

**Fees and Services**

Engineering Fees	5,200	
Subtotal		5,200

**Construction**

Remove and Install Corridor Ceilings	9,300	
New Drywall Separation	43,200	
Subtotal		52,500

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Corridor Lockers - Renewal**

**Project Location: AMS**

**Project Justification: Student lockers are 34 years old and have exceeded their life expectancy**

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule	
	Cost	Check One	Check One	Percent
Planning/Engineering:	\$25,000		Current Revenues	FY15
Acquisition:	\$273,900	√	G.O. Bond	FY16 100%
Construction:			Reserve	FY16
Other:	\$11,000		Special Assessment/Fee	FY15
<b>Total Estimated Cost (annually):</b>	<b>\$309,900</b>		<b>Grant (identify)</b>	<b>FY15</b>
<b>Source of Estimate:</b>			<b>Other (identify)</b>	<b>FY15</b>

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

Proposed Budget  
Student Wall Lockers  
Renewal  
AMS  
Auburn, Maine

1/17/14

**TOTAL FUNDS REQUIRED**

**248,800**

**Administrative Cost & Reserve**

Advertising & Legal Cost	1,000	
Bid Contingency	10,500	
Construction Contingency	10,500	
Subtotal		22,000

**Fees & Services**

Engineering	16,800	
Subtotal		16,800

**Construction**

Remove and dispose of wall lockers		
Install new student wall lockers	210,000	
Subtotal		210,000

Proposed Budget FY16  
For  
New Roof Hatch and OSHA Approved Ladder  
Auburn Middle School  
Auburn, Maine

January 9, 2014

**TOTAL FUNDS REQUIRED** **85,000**

**Administrative Cost and Reserve**

Advertising & Legal Cost	1,000
Bid Contingency	3,500
Construction Contingency	3,500
Subtotal	8,000

**Fees and Services**

Engineering Fees	7,000
Subtotal	7,000

**Construction**

Demolition, New Roof Hatch, OSHA - Ladder, Roof Repairs and Painting	70,000
Subtotal	70,000

**FRANKLIN**

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
 Fiscal Year: Fy15-16

Project Title: FY 15 - CIP -

**Department: Auburn School Department**

**Project Description: Interior Carpet Renewal with VCT**

**Project Location: Franklin School**

**Project Justification: Current carpets are 30 years old and showing wear and tripping hazards. Asbestos tiles will require abatement before new material is laid. Renewal carpets with VCT material and afford students and staff with better air quality and remove tripping hazards.**

Cost Estimate			Proposed Funding Source		Proposed Fiscal Year Schedule	
			Cost	Check One	Check One	Percent
Planning/Engineering:			Current Revenues		FY15	
Acquisition:		√	G.O. Bond		FY15	100%
Construction:			Reserve		FY15	
Other:			Special		FY15	
			Assessment/Fee		FY15	
<b>Total Estimated Cost:</b>	\$147,000		Grant (identify)		FY15	
<b>Source of Estimate:</b>			Other (identify)		FY15	

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**



# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
 Fiscal Year:   Fy15-16

Project Title: FY 15 - CIP -

**Department: Auburn School Department**

**Project Description: New Fire Alarm System**

**Project Location: Franklin School**

**Project Justification: This building is sprinkler within but no fire alarm. A new fire alarm would be tied into 911 for alert notification in case of fire/smoke.**

Cost Estimate			Proposed Funding Source	Proposed Fiscal Year Schedule	
	Cost	Check One		Check One	Percent
Planning/Engineering:			Current Revenues		FY15
Acquisition:		√	G.O. Bond		FY15   100%
Construction:			Reserve		FY15
Other:			Special		FY15
			Assessment/Fee		FY15
<b>Total Estimated Cost:</b>	\$76,000		Grant (identify)		FY15
<b>Source of Estimate:</b>			Other (identify)		FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

**FAIRVIEW**

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: 1997 Wing Carpet Replacement**

**Project Location: Fairview School**

**Project Justification: These carpets are 18 years old and showing wear and tipping hazards. We would replace carpets with VCT for ambient environment cleaning issue.**

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule	
	Cost	Check One	Check One	Percent
Planning/Engineering:		Current Revenues		FY15
Acquisition:		G.O. Bond	√	FY15 100%
Construction:		Reserve		FY16
Other:		Special		FY15
		Assessment/Fee		FY15
<b>Total Estimated Cost (annually):</b>	\$115,360	Grant (identify)		FY15
<b>Source of Estimate:</b>		Other (identify)		FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Interior Walls 1954 Wing Renewal**

**Project Location: Fairview School**

**Project Justification: Current doors do not meet life and safety code and school security protocol. It would also allow for ADS door hardware to be installed and lockable doors in 1954 Wing of building.**

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule	
	Cost	Check One	Check One	Percent
Planning/Engineering:		Current Revenues		FY15
Acquisition:		G.O. Bond	√	FY15
Construction:		Reserve		FY16
Other:		Special		FY15
		Assessment/Fee		FY15
<b>Total Estimated Cost (annually):</b>	\$205,200	Grant (identify)		FY15
<b>Source of Estimate:</b>		Other (identify)		FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**SHERWOOD  
HEIGHTS**

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: New Telephone & Intercom System**

**Project Location: Sherwood Heights**

**Project Justification: Network Server and connectivity to Auburn Syntrex Phone System. Installing new telephone/intercom system will assist in meeting our school security needs and lessen Sherwood Heights long distance phone charges, too.**

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule	
	Cost	Check One	Check One	Percent
Planning/Engineering:			Current Revenues	FY15
Acquisition:		√	G.O. Bond	FY15 100%
Construction:			Reserve	FY16
Other:			Special	FY15
			Assessment/Fee	FY15
<b>Total Estimated Cost (annually):</b>	\$48,000		Grant (identify)	FY15
<b>Source of Estimate:</b>			Other (identify)	FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

**WALTON**

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Renewal - Fire Alarm System**

**Project Location: Walton**

**Project Justification:** The existing antiquated Fire Alarm System was installed and upgraded during the 1967 construction. We have attempted to enhance the fire alarm system over the last 15 years and it is now at point where system is malfunctioning and Norris Inc, our provider who maintains the system, is unable to locate replacement part; whereby parts are no longer being manufactured. Need to upgrade fire alarm to conform with life safety codes.

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule	
	Cost	Check One	Check One	Percent
Planning/Engineering:	\$21,000		Current Revenues	FY15
Acquisition:		√	G.O. Bond	FY15 100%
Construction:	\$218,000		Reserve	FY16
Other:	\$22,000		Special	FY15
			Assessment/Fee	FY15
<b>Total Estimated Cost (annually):</b>	<b>\$261,000</b>		Grant (identify)	FY15
<b>Source of Estimate:</b>			Other (identify)	FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**



# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Renewal - Student Boys/Girls Bathroom in Primary Wing**

**Project Location: Walton**

**Project Justification: Bathrooms are original and require new toilet units and partition. IT would also allow for ceramic tiles to be used on floors and mid-wall section.**

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule	
	Cost	Check One	Check One	Percent
Planning/Engineering:		Current Revenues		FY15
Acquisition:		G.O. Bond	√	FY15 100%
Construction:		Reserve		FY16
Other:		Special		FY15
		Assessment/Fee		FY15
<b>Total Estimated Cost (annually):</b>	\$138,300	Grant (identify)		FY15
<b>Source of Estimate:</b>		Other (identify)		FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Renewal - Student Wall Lockers**

**Project Location: Walton**

**Project Justification: The current wall lockers are 35years old and parts are no longer available. Contact with several school locker vendors recommended that replacement is only way of making wall lockers safe. Students use these lockers daily.**

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule	
	Cost	Check One	Check One	Percent
Planning/Engineering:			Current Revenues	FY15
Acquisition:		√	G.O. Bond	FY15
Construction:			Reserve	FY16
Other:			Special	FY15
			Assessment/Fee	FY15
<b>Total Estimated Cost (annually):</b>	\$115,500		Grant (identify)	FY15
<b>Source of Estimate:</b>			Other (identify)	FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

**WASHBURN**

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Playground Surface**

**Project Location: Washburn School**

**Project Justification: This is an inner-city school with no soft playspace. Establishing soft playspace for students will allow them to have green space for play. Current area is gravel and old asphalt.**

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule	
	Cost	Check One	Check One	Percent
Planning/Engineering:			Current Revenues	FY15
Acquisition:		√	G.O. Bond	FY15 100%
Construction:			Reserve	FY16
Other:			Special	FY15
			Assessment/Fee	FY15
<b>Total Estimated Cost (annually):</b>	\$120,000		Grant (identify)	FY15
<b>Source of Estimate:</b>			Other (identify)	FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

**EAST AUBURN**

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Repoint Chimney**

**Project Location: East Auburn**

**Project Justification: Repoint chimney bricks and waterproof. VFA system acknowledges the renewal year for chimney repointing before water issues appears.**

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule	
	Cost	Check One	Check One	Percent
Planning/Engineering:		√	Current Revenues	FY15
Acquisition:		√	G.O. Bond	FY15
Construction:			Reserve	FY16
Other:			Special	FY15
			Assessment/Fee	FY15
<b>Total Estimated Cost (annually):</b>	\$20,500		Grant (identify)	FY15
Source of Estimate:			Other (identify)	FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

# CITY OF AUBURN

## FY15 - FY16 Capital Improvement Program

### Project Description Worksheet

Priority:  
Fiscal Year:

Project Title: FY 15/16 CIP

0

**Department: Auburn School Department**

**Project Description: Interior Walls Old 1954 Wing Renewal**

**Project Location: East Auburn**

**Project Justification: Old 1954 Wing has old plaster walls that was not addressed in 2000 construction. This will remedy the walls with new drywall and include suspended ceilings in 4 classrooms**

Cost Estimate	Proposed Funding Source		Proposed Fiscal Year Schedule	
	Cost	Check One	Check One	Percent
Planning/Engineering:			Current Revenues	FY15
Acquisition:		√	G.O. Bond	FY15 100%
Construction:			Reserve	FY16
Other:			Special	FY15
			Assessment/Fee	FY15
<b>Total Estimated Cost (annually):</b>	\$47,200		Grant (identify)	FY15
<b>Source of Estimate:</b>			Other (identify)	FY15

**Impact on Operating Costs:**

**Other related City Projects:**

**Alternatives/impacts if the project is not funded or completed:**

# **GOAL 2**

**To increase energy efficiencies  
to reduce annual costs.**



# SIEMENS

## ENERGY PERFORMANCE CONTRACT PERFORMANCE ASSURANCE REPORT

FOR

Auburn Hall, 60 Court St. • Auburn, ME 04210 • Phone: (207) 333-6600 • Fax: (207) 333-6628

Auburn School Department



*Working collaboratively so that all students learn and succeed in a changing world.*



**Performance Year 5: March 2013 – March 2014**

Siemens Industry Inc.  
Scarborough, ME

**SIEMENS**

### PERFORMANCE SOLUTIONS AGREEMENT OVERVIEW

**Client:**

Auburn School Department

**Client Contact:** Jude G. Cyr, Business Manager

**Contract Date:** April 15, 2011

**Siemens Contacts:** Colleen Fissette, Performance Assurance Specialist  
Email: colleen.fissette@siemens.com

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Siemens Industry, Inc.  
66 Mussey Road  
Scarborough, ME 04074  
Phone: (207) 885 - 4115

**Performance Guarantee Period:** March 13, 2011 to March 12, 2021

**Contract Term Length:** 10 Years

## Table of Contents

<b>1.</b>	<b>Executive Summary</b>	<b>46</b>
<b>2.</b>	<b>Performance Assurance Overview</b>	<b>49</b>
2.1	Measurement and Verification Methods .....	49
2.2.	Guaranteed Savings .....	49
2.3	Utility Rate Structures and Escalation Rates.....	50
2.4	Baseline Utility Data .....	51
2.5	Baseline Operating Data.....	51
2.6	Contracted Baseline Operating Data .....	51

<b>3.</b>	<b>Performance Assurance Results</b>	<b>52</b>
3.1.	Summary of Guaranteed and Verified Energy Savings .....	52
3.2.	Option A Savings .....	53
3.2.1.	Performance Year Savings .....	53
3.2.2.	Results by Measure.....	54
3.2.2.1.	Lighting Retrofit.....	54
3.2.2.2.	Lighting Sensors.....	55
3.2.2.3.	Boiler Upgrade .....	55
3.2.2.4.	Variable Frequency Drives (VFDs) .....	56
3.3.	Option B Savings .....	56
3.3.1.	Performance Year Savings.....	56
3.3.2.	Results by Measure.....	57
3.3.3.1.	Energy Management System (EMS).....	57
3.4.	Option D Stipulated Savings .....	60
3.4.1.	Performance Year Savings.....	60
3.4.2.	Results by Measure.....	61
3.4.3.1.	Building Envelope Improvements.....	61
3.4.3.2.	Plug Load Controls.....	61
3.4.3.3.	Electric Summer Domestic Hot Water Heater .....	62
3.4.3.4.	Air Handler Unit (AHU) Replacement .....	62
<b>4.</b>	<b>Emissions Reduction</b>	<b>63</b>
<b>5.</b>	<b>Appendix</b>	<b>63</b>
5.1	Combustion Efficiency Results for Year 1 .....	64

## 1. Executive Summary

### Performance Year 5: March 13, 2013 – March 12, 2014

Siemens Industry (Siemens) is pleased to provide the Auburn School Department with this Year 5 energy savings guarantee report. This report details the energy performance of the implemented project by comparing realized energy and cost savings for this annual period to the contract guaranteed savings. Your Energy Performance Contract with Siemens guaranteed **\$221,057** in annual cost savings. Total Year 5 cost savings for this annual period amounted to **\$428,883** and consisted of **\$364,759** in Measured and Verified Savings, **\$11,699** in Stipulated Energy Savings, and **\$52,424** in Stipulated Operational Savings. Total Year 5 savings are **\$207,826** in excess of the guaranteed savings for this performance period. The excess in savings is largely due to the fuel switch from oil to natural gas and the increase in cost of fuel oil.

**Table 1. Summary of total realized and guaranteed cost savings for the Auburn School Department.**

Performance Year	Measured and Verified Savings	Stipulated Savings	Total Realized Savings	Operational Savings	Total Year-5 Savings	Annual Guaranteed Savings	Deviation from Plan
1	\$154,160	\$11,727		\$46,578	\$213,917	\$196,406	\$17,511
2	\$156,993	\$12,079		\$47,975	\$218,542	\$202,298	\$16,244
3	\$161,641	\$12,441		\$49,415	\$224,053	\$208,368	\$15,685
4	\$424,224	\$12,814		\$50,897	\$475,121	\$214,618	\$260,503
<b>5</b>	<b>\$364,759</b>	<b>\$11,699</b>	<b>\$376,459</b>	<b>\$52,424</b>	<b>\$428,883</b>	<b>\$221,057</b>	<b>\$207,826</b>
6				\$53,997		\$227,689	
7				\$55,617		\$234,519	
8				\$57,285		\$241,555	
9				\$59,004		\$248,802	
10				\$60,774		\$256,266	
<b>YTD Totals</b>	<b>\$1,261,778</b>	<b>\$60,761</b>	<b>\$376,459</b>	<b>\$533,966</b>	<b>\$1,560,516</b>	<b>\$2,251,576</b>	<b>\$517,770</b>

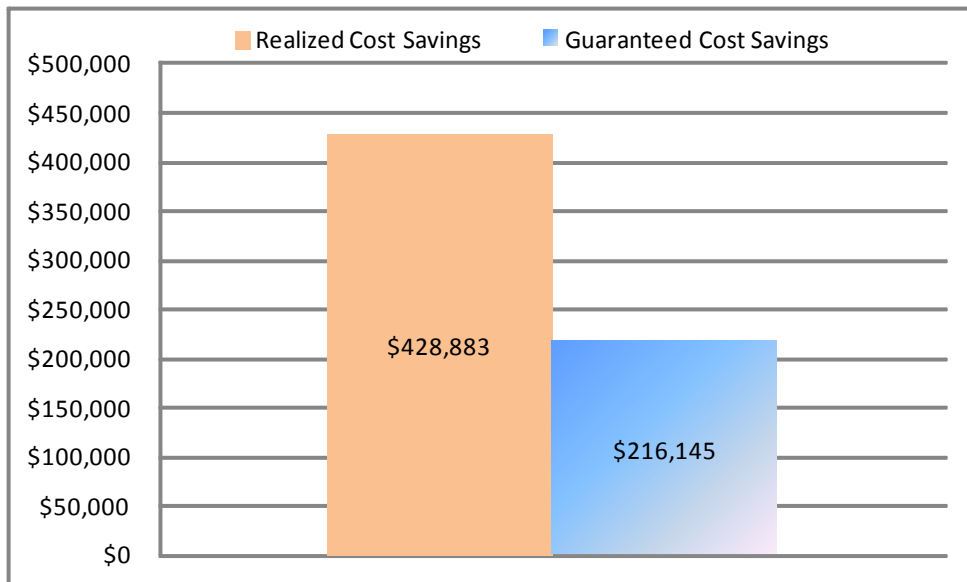


Figure 1. Year 5 Annual Realized and Guaranteed Cost Savings.

Table 2. Year-to-Date Realized Savings (Units).

Performance Year	Electric Energy Saved (kWh/yr)	#2 Fuel Oil Saved (gal/yr)	Natural Gas Saved (Therms/yr)	Propane Saved (gal/yr)
Year-1	719,515	112,576	(110,264)	264
Year-2	719,515	112,290	(111,129)	264
Year-3	719,515	112,290	(111,129)	264
Year-4	719,515	125,759	(124,619)	264
<b>Year-5</b>	<b>719,515</b>	<b>138,206</b>	<b>(146,145)</b>	<b>(399)</b>
<b>Total</b>	<b>3,597,576</b>	<b>601,121</b>	<b>(603,286)</b>	<b>657</b>

\*Note: The lighting penalty at the Bus Garage was converted from Oil to Propane.

Table 3. Performance Year 5 Realized Energy Savings by facility improvement measure (FIM).

<b>Facility Improvement Measure</b>	<b>Electric Energy Saved (kWh/yr)</b>	<b>Natural Gas Saved (Therms/yr)</b>	<b>#2 Fuel Oil Saved (gal/yr)</b>	<b>Propane Saved (gal/yr)</b>
Lighting Retrofit	532,637	(8,242)	(219)	(663)
Lighting Sensors	103,558			
Boiler Upgrade		(155,262)	138,223	
EMS Upgrade	29,257	12,614	0	
VFD for the HW pumps	22,816			
Building Envelope Improvements		4,346	202	
Plugload Controller	24,322			
Install Electric Summer DHW Heater	(469)	399		
AHU Replacement	7,393			264
<b>Total</b>	<b>719,515</b>	<b>(146,145)</b>	<b>138,206</b>	<b>(399)</b>

A change in fuel types at the Auburn Middle School and Bust Garage resulted in an increase in fuel savings and a decrease in Natural Gas savings during this annual period. During year 4 of performance the Auburn Middle School used Fuel Oil for 6 months before switching to Natural Gas. Also the Bus Garage no longer uses Fuel Oil and now uses Propane. The energy savings calculations have been updated to reflect the change in fuel types and will remain this way for the remaining years of performance.

## 2. Performance Assurance Overview

This section of the report provides an overview of the methodology and parameters used to measure and verify savings for this report and are based on the signed contract between the Auburn School Department and Siemens Industry, Inc.

### 2.1 Measurement and Verification Methods

Realized savings were calculated using the methodology described in Exhibit C of the energy performance. There are four guarantee options to measure and verify savings: Option A - Measured Capacity, Option B - Measured Consumption, Option C - Main Meter Comparison, and Option D - Stipulated.

**Option A - Measured Capacity.** This approach is intended for Facility Improvement Measures where a one-time measurement for specific equipment or systems instantaneous baseline energy use, and a one-time measurement for specific equipment or systems instantaneous post-implementation (Post) energy use can be measured. Baseline and Post energy consumption is calculated by multiplying the measured end use instantaneous capacity (i.e. – kW, Gal/hr, BTU/hr) by stipulated hours of operation for each mode of operation (i.e. – hours, week, month). The calculations for energy consumption will be defined in the Measurement and Verification article of this Exhibit C. The work sequence required for data collection, evaluation, and reporting will be defined in the Measurement and Verification article of this Exhibit A.

**Option B - Measured Consumption.** This approach is intended for Facility Improvement Measures where continuous periodic measurements for specific equipment or systems baseline energy use, and continuous periodic measurements for that equipment or systems post-implementation (Post) energy use can be measured. The calculations for energy consumption will be defined in the Measurement and Verification article of this Exhibit C. Periodic inspections and consumption measurements of the equipment or systems will be necessary to verify the on-going efficient operation of the equipment and saving attainment. The predetermined schedule for data collection, evaluation, and reporting will be defined in the Performance Assurance Technical Support Program article of this Exhibit A.

**Option C - Main Meter Comparison.** This approach is intended for measurements of the whole-facility or specific meter baseline energy use, and measurements of whole-facility or specific meter post-implementation (Post) energy use can be measured. The methodology to establish baseline and Post parameter identification, modeling approach and baseline or model adjustments will be defined in the Measurement and Verification article of this Exhibit C. Periodic inspections of baseline energy usage, operating practices, and facility and equipment, and meter measurements of the will be necessary to verify the on-going efficient operation of the equipment, systems, practices and facility, and saving attainment. The predetermined schedule for data collection, evaluation, and reporting will be defined in the Performance Assurance Technical Support Program article of this Exhibit A.

**Option D - Stipulated.** This approach is intended for Facility Improvement Measures where the end use capacity or operational efficiency; demand, energy consumption or power level; or manufacturer’s measurements, industry standard efficiencies or operating hours are known in advance, and used in a calculation or analysis method that will stipulate the outcome. Both CLIENT and SIEMENS agree to the stipulated inputs and outcome(s) of the analysis methodology. Based on the established analytical methodology the savings stipulated will be achieved upon completion of the Facility Improvement Measures Work and that no further measurements or calculations will need to be performed. The methodology and calculations to establish savings value will be defined in the Measurement and Verification article of this Exhibit C.

### 2.2. Guaranteed Savings

Guaranteed cost savings are shown below in Table 4.

**Table 4. Guaranteed Annual Energy Cost Savings for Year 5.**

Facility Improvement Measure	M&V Option	Guaranteed	Operational Savings	Total
		Cost Savings		Guaranteed Savings
Lighting Retrofit	A	\$65,465	\$19,221	\$84,687
Lighting Sensors	A	\$15,496		\$15,496
Boiler Upgrade	A	\$48,947	\$27,012	\$75,959
EMS Upgrade	B	\$22,109	\$6,190	\$28,300
VFD for the HW pumps	A	\$3,416		\$3,416
Building Envelope Improvements	D	\$7,282		\$7,282
Plugload Controller	D	\$3,603		\$3,603
Install Electric Summer DHW Heater	D	\$555		\$555
AHU Replacement	D	\$1,759		\$1,759
<b>Total</b>		<b>\$168,633</b>	<b>\$52,424</b>	<b>\$221,057</b>

### 2.3 Utility Rate Structures and Escalation Rates

Utility rates used to calculate dollar savings for this report are based on the utility rate in effect for the predominant bill or the utility rate in effect for the corresponding period of the Baseline period, whichever is greater. An escalation rate of 3% is applied annually to the floor rate and compared to the utility rate in effect for this performance period. The greater of the two is applied to the actual utility savings occurring during this annual period. Table 5 summarizes the rates used for Performance Year 5.

**Table 5. Summary of Utility Rates for Performance Year 5**

All Location	Contract Escalated Rates	Actual Year 5 Rates	Year 5 Reported Rates
Electric Consumption (\$/kWh)	\$0.1576	\$0.1229	<b>\$0.1576</b>
Fuel Oil (\$/Gal)	\$2.18	\$3.18	<b>\$3.18</b>
Propane (\$/Gal)	\$2.25	\$1.92	<b>\$2.25</b>

**Table 6. Actual Natural Gas Rates, Performance Year 5**

Location	Year 5
	2013-2014
Auburn Middle School	\$ 1.07
Edward Little High School	\$ 1.36
Fairview Elementary	\$ 1.29
Sherwood Heights	\$ 1.28
Walton Elementary	\$ 1.19
Washburn Elementary	\$ 2.18
Franklin Main Bldg	\$ 1.71

## 2.4 Baseline Utility Data

The annual period selected as the Baseline period starts March 2006 and ends February 2007. Tables 7 outlines the utility consumption that occurred during the Baseline period.

**Table 7. Electric Baseline Consumption (March 2006 - February 2007)**

Location	Electricity (kWH)	Fuel Oil (Gal)	Propane (Gal)
Bus Garage	248,230	9,481	
East Auburn	102,400	6,933	5,501
Fairview Elementary	326,320	37,874	
Franklin Alternative	38,500	7,632	
High School	892,502	70,524	10,362
Merrill Hill	29,617	5,833	
Middle School	548,620	30,486	
Sherwood Heights	367,200	30,485	
Walton Elementary	180,000	39,378	
Washburn	125,525		
<b>Total</b>	<b>2,858,914</b>	<b>238,626</b>	<b>15,863</b>

## 2.5 Baseline Operating Data

The operating practices during the Baseline period are used to determine the guaranteed savings based on the efficiency improvements after implementing the facility improvement measures, these parameters are shown in Table 8.

**Table 8. Baseline Operating Schedules**

Units	Occupied	Unoccupied
High School	72	72
Middle School	72	72
Sherwood Heights	72	72
Walton Elementary	72	72

## 2.6 Contracted Baseline Operating Data

The guaranteed savings from the facility improvement measures provided under this contract are based on implementation of the following schedules and set points shown in Tables 8.

**Table 9. Post Implementation schedule**



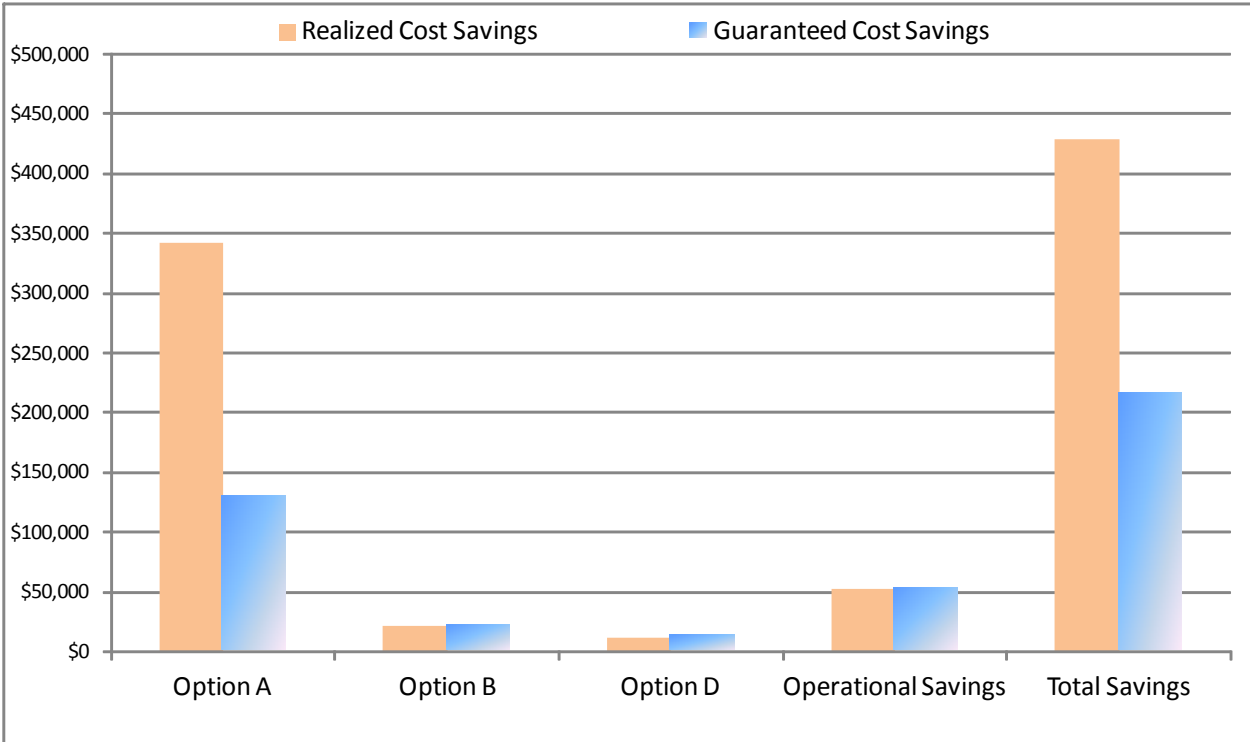
<b>Units</b>	<b>Occupied</b>	<b>Unoccupied</b>
High School	72	65
Middle School	72	65
Sherwood Heights	72	65
Walton Elementary	72	65

### **3. Performance Assurance Results**

#### **3.1. Summary of Guaranteed and Verified Energy Savings**

Total realized annual energy savings for this performance year were **\$428,883** and were comprised of **\$342,553** of Option A, **\$22,207** in Option B, **\$11,699** in Option D savings, **\$52,424** in stipulated Operational Savings, respectively. Total

realized annual savings are in excess of the annual guaranteed energy savings of **\$221,057** by **\$207,826**. The following sections detail the Option A, B, and D savings.



**Figure 2. Realized and Guaranteed Annual Cost Savings for Year 5.**

**3.2. Option A Savings**

**3.2.1. Performance Year Savings**

Option A savings are verified based on one-time measurements taken after substantial completion of each facility improvement measure and the estimated savings are included as ongoing realized savings in each subsequent performance year. The table below summarizes Option A savings realized during the current performance year and shows that total Option A savings amount to **\$342,553** which is **\$209,228** above the guaranteed Option A savings (**\$133,324**).

**Table 10. Summary of Option A Savings for Performance Year 5**

Description of FIM	Electric Energy Savings (kWh/yr)	Natural Gas Savings (Therms/yr)	Fuel Oil Savings (Gal/yr)	Propane Savings (Gal/yr)	Verified \$ Saved per year	Guaranteed \$ per year	Excess/ Shortfall \$
Lighting Retrofit	532,637	(8,242)	(219)	(663)	\$70,565	\$65,465	\$5,099
Lighting Sensors	103,558				\$16,318	\$15,496	\$822
Boiler Upgrade		(155,262)	138,223		\$252,075	\$48,947	\$203,128
VFD for the HW pumps	22,816				\$3,595	\$3,416	\$179
<b>Total Option A Savings</b>	<b>659,011</b>	<b>-163,504</b>	<b>138,004</b>	<b>(663)</b>	<b>\$342,553</b>	<b>\$133,324</b>	<b>\$209,228</b>

\*Note: The lighting heating penalty at the bus garage has been changed from oil to propane.

A significant increase in realized cost savings, resulting especially from the boiler upgrades, is the result of incorporating actual Year 5 utility rates, during which oil costs were significantly higher than the baseline oil rates outlined in Article 2.3 of this document. A comparison of realized cost savings under actual and escalated baseline rates is shown below in Table 11.

**Table 11. Utility Rate Savings Comparison.**

Description of FIM	\$ Saved per Contract	\$ Saved Escalated	
		Utility Rates	Guaranteed \$ per year
Lighting Retrofit	\$70,565	\$71,284	\$65,465
Lighting Sensors	\$16,318	\$16,318	\$15,496
Boiler Upgrade	\$252,075	\$113,653	\$48,947
VFD for the HW pumps	\$3,595	\$3,595	\$3,416
<b>Total Option A Savings</b>	<b>\$342,553</b>	<b>\$204,850</b>	<b>\$133,324</b>

### 3.2.2. Results by Measure

#### 3.2.2.1. Lighting Retrofit

Energy savings resulting from the lighting retrofit were verified based upon a one-time measurement of the lighting power capacity under existing conditions, a one-time measurement of the lighting power capacity upon completion of the lighting retrofit project and agreed-upon annual operating hours. A representative sample of each lighting-fixture type was used to determine pre-retrofit and post-retrofit kW. The following tables detail the savings results from the lighting and controls retrofit.

The heating penalties have been adjusted to reflect the fuel used at each location.

**Table 12. Annual Savings Associated with the Lighting Retrofit**

Description of FIM	Electric Energy Savings (kWh/yr)	Heating Penalty, Natural Gas	Heating Penalty, Gal Fuel Oil	Heating Penalty, Gal Propane	Verified \$ Saved per year	Guaranteed \$ per year	Excess/ Shortfall \$
<b>Lighting Retrofit</b>	<b>532,637</b>	<b>(8,532)</b>	<b>(219)</b>	<b>(663)</b>	<b>\$70,565</b>	<b>\$65,465</b>	<b>\$5,099</b>
Bus Garage	34,190			(663)	\$3,894		
East Auburn Community School	18,330		(219)		\$2,191		
*Fairview Elementary	55,492	(986)			\$7,469		
*Franklin Alternative	16,337	(290)			\$2,077		
*Edward Little High School	129,459	(2,301)			\$17,274		
*Auburn Middle School	109,467	(1,945)			\$15,171		
*Sherwood Heights	101,544	(1,805)			\$13,696		
*Walton Elementary	41,899	(745)			\$5,712		
*Washburn	25,919	(461)			\$3,080		

\*Locations indicated have been converted from Fuel Oil to Natural Gas

### 3.2.2.2. Lighting Sensors

Energy savings resulting from lighting sensors were verified using spot measurements of a 10% sample of baseline and post-installation fixture types or fixture circuits to establish demand. Baseline and post-installation annual operating hours are stipulated.

**Table 13. Annual Savings Associated with the Lighting Sensors.**

Description of FIM	Electric Energy Savings (kWh/yr)	Verified \$ Saved per year	Guaranteed \$ per year
<b>Lighting Sensors</b>	<b>103,558</b>	<b>\$16,318</b>	<b>\$15,496</b>
Bus Garage	7,301	\$1,150	
East Auburn Community School	3,312	\$522	
Fairview Elementary	7,241	\$1,141	
Franklin Alternative	1,678	\$264	
Edward Little High School	40,778	\$6,425	
Auburn Middle School	18,853	\$2,971	
Sherwood Heights	12,587	\$1,983	
Walton Elementary	7,536	\$1,187	
Washburn	4,272	\$673	

### 3.2.2.3 Boiler Upgrade

Siemens replaced existing boilers at Fairview Elementary School, Sherwood Heights Elementary School, Walton Elementary School, and Auburn Middle School with new high efficient equivalents. Energy savings is based on an increase in efficiency from existing (71%) and a measured combustion efficiency for each location performed during the year one performance period. Since final completion was signed all four schools have been converted from Fuel oil to Natural Gas. Increased cost savings results due to the drop in natural gas rates and the increase in fuel oil rates.

**Table 14. Combustion Efficiency Results**

Location	Existing	Proposed	Measured
Fairview Elementary	71%	85%	<b>88.8%</b>
Auburn Middle School	71%	85%	<b>88.8%</b>
Sherwood Heights	72%	85%	<b>86.1%</b>
Walton Elementary	71%	85%	<b>85.6%</b>

**Table 15. Annual Savings Associated with the Boiler Upgrades.**

Description of FIM	Fuel Oil Savings (Gal/yr)	Natural Gas Savings (Therms/yr)	Verified \$ Saved per year	Guaranteed \$ per year	Excess/ Shortfall \$
<b>Boiler Upgrade</b>	138,223	(155,262)	\$ 252,075	\$48,947	\$203,128
Fairview Elementary	37,874	(41,392)	\$ 67,109	\$15,026	
Auburn Middle School	30,486	(33,946)	\$ 60,844	\$9,693	
Sherwood Heights	30,485	(35,190)	\$ 52,158	\$9,733	
Walton Elementary	39,378	(44,734)	\$ 71,964	\$13,070	

### 3.2.2.4. Variable Frequency Drives (VFDs)

Siemens replaced constant speed motor controllers with variable speed drive motors at Fairview Elementary School, Franklin Alternative School, Edward Little High School, and Auburn Middle School’s hot water pumps.

**Table 16. Savings Associated with the VFDs**

Description of FIM	Electric Energy Savings (kWh/yr)	Verified \$ Saved per year	Guaranteed \$ per year	Excess/ Shortfall \$
<b>VFD for the HW pumps</b>	22,816	\$3,595	\$3,416	\$179
Fairview Elementary	8,306	\$1,309		
Middle School	14,510	\$2,286		

### 3.3. Option B Savings

#### 3.3.1. Performance Year Savings

Realized Option B savings amounted to **\$22,207** which is **\$97** in excess of Year 5 guaranteed Option B savings of **\$22,109**. These realized savings are calculated each year based on measurements and methods outlined in Exhibit C of the performance contract.

**Table 17. Summary of Option B Savings for Performance Year 5**

Description of FIM	Electric Energy Savings (kWh/yr)	Natural Gas (therms/yr)	Verified \$ Saved per year	Guaranteed \$ per year	Excess/ Shortfall \$
EMS Upgrade	29,257	12,614	\$22,207	\$22,109	\$97

The Option B energy and cost savings have been updated to reflect the fuel switch associated with the boiler burner upgrade. As described in Article 2.3 of this document contract utility rates were used to calculate cost savings. Table 18 demonstrates the savings comparison between using contract rates and escalated rates.

**Table 18. Utility Rate Savings Comparison**

<b>Description of FIM</b>	<b>\$ Saved per Contract Rates</b>	<b>\$ Saved Escalated Utility Rates</b>	<b>Guaranteed \$ per year</b>
EMS Upgrade	\$22,207	\$19,906	\$22,109

### 3.3.2 Results by Measure

#### 3.3.3.1 Energy Management System (EMS)

Siemens expanded the existing EMS and provided programming to allow for implementation of energy savings control strategies at Auburn Middle School, Sherwood Heights Elementary School, and Walton Elementary School. The optimization of the EMS resulted in electric, fuel oil, and natural gas savings. The control strategies are described below.

##### **Night Setback: Sherwood Heights, Walton Elementary**

At the location listed above the heating and ventilating equipment was automatically space temperature set points were setback during unoccupied periods by the EMS system. The night setback reduces electrical energy consumption by replacing or eliminating operation of the supply and exhaust fans when areas are unoccupied. A one month trend analysis was done of Sherwood Heights and Walton Elementary space temperature and set point. Space temperature set points were found as purposed, 70 during occupied periods and 65 during unoccupied periods, shown in Figure 3 and 4.

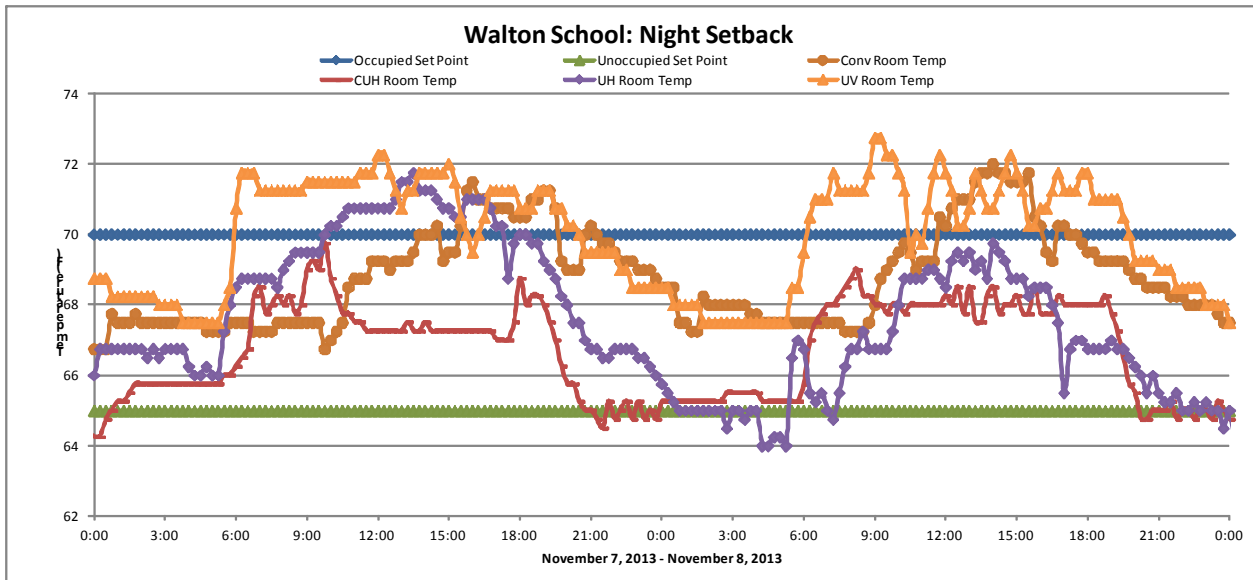


Figure 3. Walton Elementary School Night Setback, November 2013

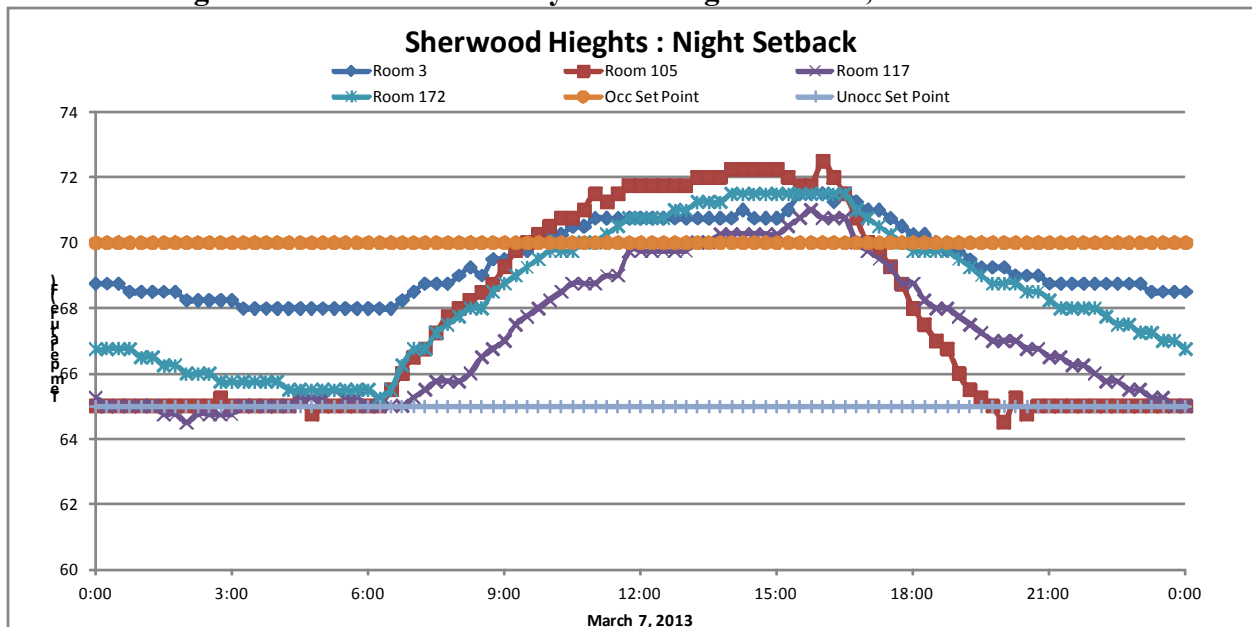


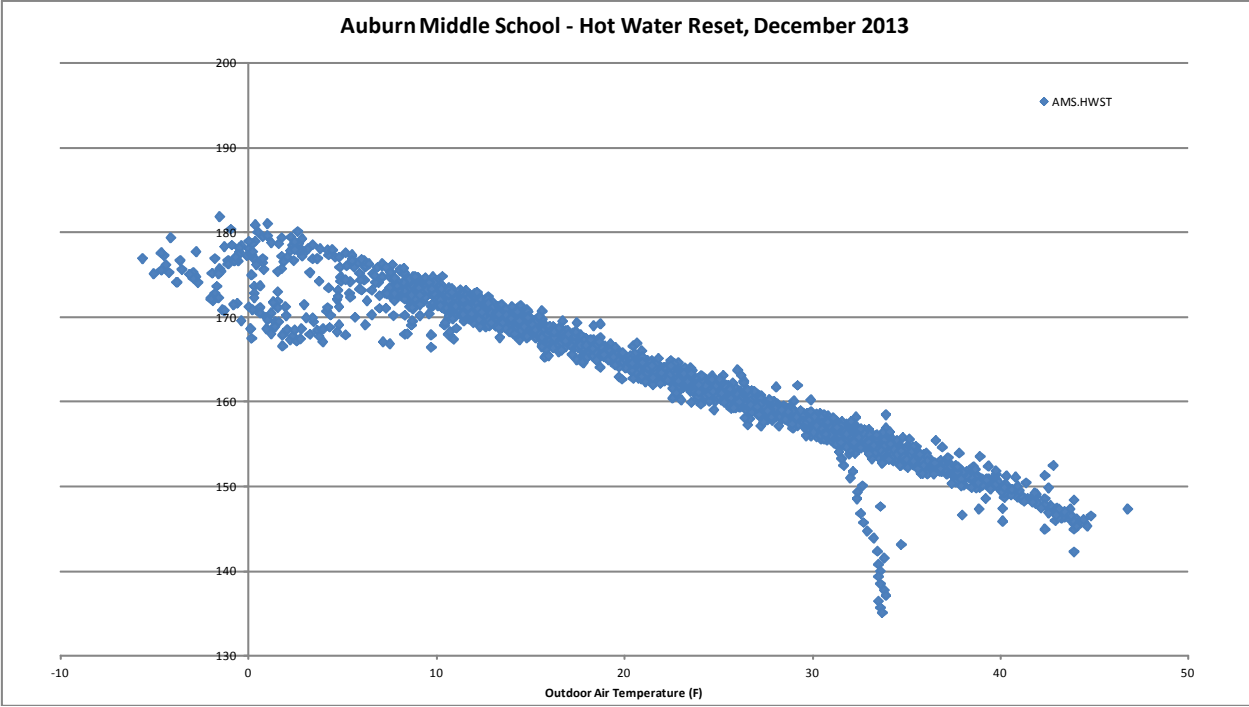
Figure 4. Sherwood Heights Elementary, Night Setback March 2013

Table 19. Savings Associated with Night Setback

Description of FIM	Electric Energy Savings (kWh/yr)	Natural Gas (Therms/yr)	Verified \$ Saved per year
<b>Night Setback</b>			
Sherwood Elementary	22,459	4,406	\$9,165
Walton Elementary	6,799	7,120	\$9,579

Hot Water Reset: Auburn Middle School

Thermal energy savings results from implementation of hot water supply temperature set point reset by varying the hot water supply temperature set point based on outdoor air temperature. The supply temperature set point will be at a minimum of 120°F and at a maximum of 160°F. To verify the hot water reset strategy one month of trend analysis was done. Figure 5 demonstrates how the Hot Water Reset performed during the month of December 2013.



**Figure 5. Hot Water Reset, Auburn Middle School December 2013**

**Table 20. Savings Associated with Hot Water Reset**

Description of FIM	Natural Gas (Therms/yr)	Verified \$ Saved per year
<i>Hot Water Reset</i>		
Auburn Middle School	1,087	\$3,462



### 3.4. Option D Stipulated Savings

Realized Option D savings amounted to **\$11,699** and are based on the predicted savings calculated in the detailed energy audit as agreed upon in the performance contract.

#### 3.4.1. Performance Year Savings

**Table 21. Summary of Option D Savings for Performance Year 5**

Description of FIM	Electric Energy Savings (kWh/yr)	Fuel Oil Savings (gallons/yr)	Natural Gas Savings (therms/yr)	Propane Savings (Gal/yr)	Verified \$ Saved per year	Guaranteed \$ per year	Excess/ Shortfall \$
Building Envelope Improvements		202	4,346		\$5,704	\$7,282	(\$1,578)
Plugload Controller	24,322				\$3,832	\$3,603	\$230
Install Electric Summer DHW Heater	(469)		399		\$403	\$555	(\$151)
AHU Replacement	7,393			264	\$1,759	\$1,759	\$0
<b>Total Option D Savings</b>	<b>31,246</b>	<b>202</b>	<b>4,745</b>	<b>264</b>	<b>\$11,699</b>	<b>\$13,199</b>	<b>(\$1,499)</b>

The Option D energy and cost savings have been updated to reflect the fuel switch associated with the boiler burner upgrades. Although energy savings are stipulated the resultant cost savings is lower than guaranteed due to the decrease in actual fuel cost associated with the use of natural gas. As described in article 2.3 of this document contract utility rates were used to calculate cost savings. Table 22 demonstrates the savings comparison between using contract rates and escalated rates.

**Table 22. Utility Rate Comparison**

Description of FIM	\$ Saved per Contract Rates	\$ Saved Escalated Utility Rates	Guaranteed \$ per year
Building Envelope Improvements	\$5,704	\$5,502	\$7,282
Plugload Controller	\$3,832	\$3,832	\$3,603
Install Electric Summer DHW Heater	\$403	\$403	\$555
AHU Replacement	\$1,759	\$1,759	\$1,759
<b>Total Option D Savings</b>	<b>\$11,699</b>	<b>\$11,497</b>	<b>\$13,199</b>

### 3.4.2 Results by Measure

#### 3.4.3.1 Building Envelope Improvements

To control air leakage Siemens’ sealed gaps, cracks, and holes using appropriate materials and systems in doors, windows, and roofs as described in Exhibit A of the performance contract.

**Table 22. Savings Associated with Building Envelope**

Description of FIM	Fuel Oil (gallons/yr)	Natural Gas (therms/yr)	Verified \$ Saved per year	Guaranteed \$ per year	Excess/ Shortfall \$
<b>Building Envelope Improvements</b>	<b>202</b>	<b>4,346</b>	<b>\$5,704</b>	<b>\$7,282</b>	<b>(\$1,578)</b>
East Auburn Community School	202		\$643		
Fairview Elementary		823	\$1,064		
Sherwood Heights		564	\$720		
Walton Elementary		929	\$1,110		
Auburn Middle School		2,030	\$2,168		

#### 3.4.3.2. Plug Load Controls

Siemens installed vending machine occupancy controllers to manage the power consumption of the vending machines. Utilizing a Passive Infrared sensor, the VMOC completely powers down a vending machine when the area surrounding it is unoccupied. Once powered down, the VMOC monitors the room’s temperature and automatically re-power the vending machine at one to three hour intervals to ensure that the product stays cold.

**Table 23. Plug Load Controller locations**

Schools	Soda Machines	Snack Machines
Edward Little HS	8	0
Auburn Middle School	3	1
East Auburn Community School	1	0
Sherwood Elementary	0	0
Fairview Elementary	2	0
Franklin Elementary	1	0
Walton Elementary	1	1
Total	16	2

**Table 24. Savings Associated with Plug Load Controls**

Description of FIM	Electric Energy Savings (kWh/yr)	Verified \$ Saved per year	Guaranteed \$ per year	Excess/ Shortfall \$
<b>Plugload Controller</b>	<b>24,322</b>	<b>\$3,832</b>	<b>\$3,603</b>	<b>\$230</b>
East Auburn Community School	1,454	\$229		
Fairview Elementary	2,907	\$458		
Franklin Alternative	1,808	\$285		
Walton Elementary	1,808	\$285		
Edward Little High School	11,629	\$1,832		
Auburn Middle School	4,715	\$743		

### 3.4.3.3 Electric Summer Domestic Hot Water Heater

Siemens installed a dedicated Summer Domestic Hot Water Heater to eliminate the use of the heating boilers.

**Table 25. Savings Associated with the Electric Summer Domestic Hot Water Heater**

Description of FIM	Electric Energy Savings (kWh/yr)	Natural Gas (therms/yr)	Verified \$ Saved per year	Guaranteed \$ per year	Excess/ Shortfall \$
Install Electric Summer DHW Heater Walton Elementary	(469)	399	\$403	\$555	(\$151)

### 3.4.3.4. Air Handler Unit (AHU) Replacement

Siemens replaced the existing duct heaters with a high efficient condensing furnace.

**Table 26. Savings Associated with AHU Replacement**

Description of FIM	Electric Energy Savings (kWh/yr)	Propane Savings (Gal/yr)	Verified \$ Saved per year	Guaranteed \$ per year	Excess/ Shortfall \$
<b>AHU Replacement</b>	<b>7,393</b>	<b>264</b>	<b>\$1,759</b>	<b>\$1,759</b>	<b>\$0</b>
East Auburn Community School					

## 4. Emissions Reduction

The following table converts the energy savings (electric, fuel oil, propane, etc.) into pounds of carbon dioxide that would have been released into the atmosphere if this project was not performed. These values are then converted into everyday examples to illustrate how this performance contract has decreased the carbon footprint of the Auburn School Department. For example, from the table below, the realized energy savings avoided the equivalent of the **carbon dioxide emission of 184.4 cars in Year 5.**

**SIEMENS**

### Project Emission Summary

Organization: *Auburn School Department*  
 Facility/Project: *Auburn School Department*  
 Baseline Year: *5*  
 Project Term (years): *10*

eGRID Sub-region name: *NPCC New England*      Custom Emissions Factor: *n/a*

#### Annual Reduction

##### CO<sub>2</sub>e Reductions

Electricity	836,947.0
Natural Gas	-1,711,065.6
#1, #2, #4 Fuel Oil	3,093,603.1
#5, #6 Fuel Oil	0.0
Total	2,219,484.4

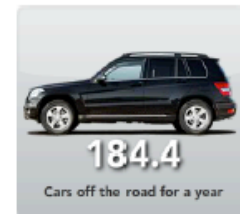
in pounds

##### Other Pollutants

NO <sub>x</sub>	1,041.9
SO <sub>2</sub>	2,506.9

in pounds

##### Equivalencies



## 5. Appendix

# 5.1 Combustion Efficiency Results for Year 1

*Boiler # 2 Sherwood ele*  
 BACHARACH, INC.  
 PCA 25  
 SN: KN1099

=====

TIME 12:48:17 pm  
 DATE 02/09/2010

FUEL  
 NATGAS

STACK-TEMP 223 °F  
 AMB.-TEMP 82.5 °F  
 O2 5.2 %  
 CO2 8.9 %  
 CO 0 ppm  
 % COR CO 0 ppm  
 EFFICIENCY 86.9 %  
 EX. AIR 29.48

DRAFT -0.08 WC  
*Ron Jue*

COMMENTS:

*Sherwood ele Boiler # 1*  
 BACHARACH, INC.  
 PCA 25  
 SN: KN1099

=====

TIME 12:48:24 pm  
 DATE 02/09/2010

FUEL  
 NATGAS

STACK-TEMP 229 °F  
 AMB.-TEMP 82.5 °F  
 O2 5.1 %  
 CO2 8.9 %  
 CO 0 ppm  
 % COR CO 0 ppm  
 EFFICIENCY 86.7 %  
 EX. AIR 28.73

DRAFT -0.10 WC  
*Ron Jue*

COMMENTS:

*Boiler # 1 Fairview*  
 BACHARACH, INC.  
 PCA 25  
 SN: KN1099

=====

TIME 02:16:48 pm  
 DATE 02/09/2010

FUEL  
 OIL NO. 2

STACK-TEMP 259 °F  
 AMB.-TEMP 81.0 °F  
 O2 6.4 %  
 CO2 10.8 %  
 CO 0 ppm  
 % COR CO 0 ppm  
 EFFICIENCY 89.2 %  
 EX. AIR 40.92

DRAFT -0.05 WC  
*James Hudson*

COMMENTS:

*Walton Elem.*  
 BACHARACH, INC.  
 PCA 25  
 SN: KN1099

=====

TIME 01:32:52 pm  
 DATE 02/09/2010

FUEL  
 NATGAS

STACK-TEMP 253 °F  
 AMB.-TEMP 83.0 °F  
 O2 3.5 %  
 CO2 9.8 %  
 CO 0 ppm  
 % COR CO 0 ppm  
 EFFICIENCY 86.4 %  
 EX. AIR 17.90

DRAFT -0.07 WC  
*Mike Dumas*

COMMENTS:

*Walton Elem.*  
 BACHARACH, INC.  
 PCA 25  
 SN: KN1099

=====

TIME 01:34:00 pm  
 DATE 02/09/2010

FUEL  
 NATGAS

STACK-TEMP 248 °F  
 AMB.-TEMP 83.0 °F  
 O2 5.2 %  
 CO2 8.9 %  
 CO 0 ppm  
 % COR CO 0 ppm  
 EFFICIENCY 86.2 %  
 EX. AIR 29.48

DRAFT -0.11 WC  
*Mike Dumas*

COMMENTS:

*Middle school*  
 Boiler # 1  
 BACHARACH, INC.  
 PCA 25  
 SN: KN1099

=====

TIME 02:44:58 pm  
 DATE 02/09/2010

FUEL  
 OIL NO. 2

STACK-TEMP 254 °F  
 AMB.-TEMP 76.5 °F  
 O2 5.4 %  
 CO2 11.6 %  
 CO 0 ppm  
 % COR CO 0 ppm  
 EFFICIENCY 89.5 %  
 EX. AIR 32.30

DRAFT -0.08 WC  
*Ernest F. W. Skelton*

COMMENTS:

*Boiler # 2*  
 BACHARACH, INC.  
 PCA 25  
 SN: KN1099

=====

TIME 03:00:00 pm  
 DATE 02/09/2010

FUEL  
 OIL NO. 2

STACK-TEMP 312 °F  
 AMB.-TEMP 73.0 °F  
 O2 4.8 %  
 CO2 12.0 %  
 CO 0 ppm  
 % COR CO 0 ppm  
 EFFICIENCY 88.1 %  
 EX. AIR 27.64

DRAFT -0.12 WC  
*Ernest W. Skelton*

COMMENTS: