Honeywell

Honeywell Energy Analysis Team (HEAT)

Hartford, VT School District

Energy Cost Avoidance Review

Guarantee Year 2 of 10

November 2009 through October 2010

Helping customers manage energy resources to improve financial performance

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Hartford
SCHOOL DISTRICT

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1.0 Overview

Program Overview

Measurement & Verification Services

Honeywell is pleased to provide this comprehensive report of your energy consumption. This report was processed using an industry-standard program based on proven and accepted engineering formulas for energy conservation and analysis.

Service Agreement Number:	953-85-11850
Job Number:	953-17007
Baseline Period:	Electric: April 2006 - March 2007 Water: July 2006 - June 2007 Fuel Oil & Wood: July 2004 - June 2007
Installation Period:	January 2008 - October 2008
Guarantee Period:	November 2008 - October 2018
Guarantee Term:	10 Years
Current Reporting Period:	November 2009 - October 2010
Report Preparation By:	Honeywell Energy Analysis Team: Nancy Winship-Poole, M&V Specialist Carolyn Gray, Energy Analyst Report Date: January, 2011

Locations Included in Report

Ongoing Measurement & Verification

Hartford High/Career & Technology Center
Hartford Memorial Middle
Dothan Brook School
Ottauquechee School
White River School

Deemed Satisfied at Acceptance

Bus Garage
Maintenance Shop
Superintendent's Office
Tenney House

Retrofit Highlights

Hartford High/Career & Technology Center

Summer Domestic Water Heater
Controls Upgrade
Lighting
Water Conservation
Building Envelope - Air Sealing
HVAC System/Pneumatics Repairs
Wall Insulation (Work performed by Customer - Honeywell verification only)

Hartford Memorial Middle

Boiler Replacement (Work performed by Customer due to emergency - Honeywell guarantee still in place)
Controls Upgrade
Lighting
Water Conservation
Building Envelope - Air Sealing
HVAC System/Pneumatics Repairs

Dothan Brook School

Controls Upgrade
Lighting
Water Conservation
Building Envelope - Air Sealing
HVAC System/Pneumatics Repairs

Ottauquechee School

Controls Upgrade
Lighting
Water Conservation
Building Envelope - Air Sealing
HVAC System/Pneumatics Repairs

White River School

Controls Upgrade
Building Envelope - Air Sealing
HVAC System/Pneumatics Repairs

Bus Garage

Controls Upgrade
Lighting
Building Envelope - Air Sealing

Maintenance Shop

Controls Upgrade
Lighting
Building Envelope - Air Sealing

Superintendent's Office

Controls Upgrade
Lighting
Building Envelope - Air Sealing

Tenney House

Controls Upgrade
Building Envelope - Air Sealing

Methodology

Determination of Energy Savings

Theory of Energy Management

Energy conservation measures (ECM) include the installation of equipment or systems for the purpose of reducing energy use and/or costs. The cost of ECM implementation is recovered through the savings created by the ECM. The Federal Energy Management Program (F.E.M.P) of the U.S. Department of Energy and its Measurement and Verification Guidelines for Federal Energy Projects classify measurement and verification approaches as Options A, B, C, and D. The F.E.M.P. Guideline is based on the International Performance Measurement and Verification Protocol (I.P.M.V.P.).

Option A: Verification techniques determine savings by measuring the performance of a system before and after a retrofit, either through physical measurement or the use of manufacturer data, and multiplying the difference by an agreed-upon or stipulated factor, such as hours of operation.

Option B: Verification techniques are designed for projects where long-term continuous measurement of performance is desired. Metering is conducted on an individual system level, and the measured performance is compared with a baseline to determine savings.

Option C: Verification techniques involve utility whole building meter analysis, reviewing overall energy use, and identifying the effects of energy projects on a facility. Energy use before and after a retrofit project is compared to determine savings.

Option D: Computer models are developed that use calibrated simulations of baseline and post-installation energy use to measure savings.

Baseline Variables

There are variables affecting consumption which warrant adjustment to the baseline, including billing days, weather, cost, runtime and other miscellaneous adjustments.

Billing Days Adjustment - Typically utility companies do not bill for the same number of days each month. An adjustment is made when the number of days in a pre-installation billing period does not equal the number of days in the corresponding post-installation billing period.

Methodology

Weather Adjustment - Energy consumption is often weather-related. A regression analysis is performed to identify the relationship between historic meter performance and weather, denoted by heating or cooling degree-day variables. The analysis results in a regression model utilized in calculating the baseline, adjusted for the weather difference between the pre- and post-installation period.

Cost Adjustment - Utility company rate schedules are generally used to calculate the cost of energy consumption. These rates may change frequently. The applicable utility rate schedule as determined by the performance contract is used for cost calculation in the current review period. See the Rate Escalation Schedule in this section for the rates to be used throughout the term of the guarantee.

Runtime Adjustment - A building's hours of operation (runtime) typically vary and will affect usage. Set hours of operation are agreed upon on a building-by-building basis and documented in the contract. Review period runtime is tracked on a monthly basis and compared to the agreed upon operating hours. Adjustments can be made in the event actual hours of operation exceed agreed upon hours.

Miscellaneous Adjustments - A change in consumption will occur if the square footage or occupancy levels of the facility change or if the facility adds, deletes, or changes equipment that affects building load. Savings lost or gained by the change can be calculated by standard engineering formulas.

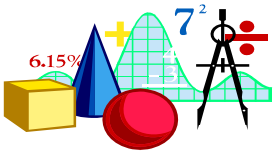
Methods Contained in This Report

Option A Verification

The pre-retrofit and post-retrofit energy usage are stipulated as measured for calculation of electric and water savings for all ECMs for the HHS/CTC, HMMS, Dothan Brook and Ottauquechee. Electric and fuel savings for the Bus Garage, Maintenance Shop, Superintendent's Office, and Tenney House are stipulated as estimated in the performance contract Exhibits. Performance of the ECMs was demonstrated during the commissioning of the retrofits. The demonstration verified that equipment affected by the implementation of the energy savings strategies will perform adequately, ensuring that energy savings will be achieved. Completion of the demonstration was evidenced by the Attachment J sign-off. Total annual energy savings associated with the implementation of these ECMs is stipulated as achieved upon post-installation acceptance of the demonstration.

Option C Verification

Fuel oil consumption for all school buildings are monitored and demonstrated annually through a utility based audit. The results are presented in an annual cost avoidance review. The adjustments included in this review using Option C are billing days, weather, cost, and utility expansion, which encompasses the runtime and miscellaneous adjustments defined above. The review of energy consumption savings for the current year was calculated through the use of Metrix™, an industry-standard program designed to calculate adjustments to consumption and report energy savings.



Methodology

Energy Conservation Measure	Electric Savings Verification Method	Fuel Savings Verification Method	Other Utility Savings Verification Method
HVAC Upgrades	N/A	OPTION C	N/A
Controls Upgrades – Boiler Burner Controls	N/A	OPTION C	N/A
Lighting Retrofits – Lighting and Controls	OPTION A w/ Stipulated Burn Hours	OPTION C	N/A
Water Conservation – Fixture Retrofits	N/A	OPTION C	OPTION A
Building envelope – Insulation, Air sealing	N/A	OPTION C	N/A
Mechanical Condition "A" – Deferred Maintenance	N/A	OPTION C	N/A

Rate Escalation Schedule

In accordance with the energy guarantee performance contract, utility rates used to calculate energy cost avoidance are stipulated. Base Year rates listed in contract Exhibit G-1.2 are used for Year 1 savings calculations; these rates are then escalated 3% each year for the remainder of the guarantee term. Below is the schedule of rates to be applied to unit avoidance to calculate cost avoidance.

	HS/CTC	HMMS	Dothan	Ottaquech	White Rvr	Bus Gar	Maint	Supt	Tenney
Electric $/kWh									
Base Yr/Yr 1	$0.110	$0.110	$0.129	$0.141	$0.129	$0.132	$0.110	$0.123	$0.125
Yr 2	$0.113	$0.113	$0.133	$0.145	$0.133	$0.136	$0.113	$0.127	$0.129
Yr 3	$0.117	$0.117	$0.137	$0.150	$0.137	$0.140	$0.117	$0.130	$0.133
Yr 4	$0.120	$0.120	$0.141	$0.154	$0.141	$0.144	$0.120	$0.134	$0.137
Yr 5	$0.124	$0.124	$0.145	$0.159	$0.145	$0.149	$0.124	$0.138	$0.141
Yr 6	$0.128	$0.128	$0.150	$0.163	$0.150	$0.153	$0.128	$0.143	$0.145
Yr 7	$0.131	$0.131	$0.154	$0.168	$0.154	$0.158	$0.131	$0.147	$0.149
Yr 8	$0.135	$0.135	$0.159	$0.173	$0.159	$0.162	$0.135	$0.151	$0.154
Yr 9	$0.139	$0.139	$0.163	$0.179	$0.163	$0.167	$0.139	$0.156	$0.158
Yr 10	$0.144	$0.144	$0.168	$0.184	$0.168	$0.172	$0.144	$0.160	$0.163
Fuel Oil $/Gal									
Base Yr/Yr 1	$2.360	$2.360	$2.360	$2.360	$2.360	$2.360	$2.360	$2.360	$2.360
Yr 2	$2.431	$2.431	$2.431	$2.431	$2.431	$2.431	$2.431	$2.431	$2.431
Yr 3	$2.504	$2.504	$2.504	$2.504	$2.504	$2.504	$2.504	$2.504	$2.504
Yr 4	$2.579	$2.579	$2.579	$2.579	$2.579	$2.579	$2.579	$2.579	$2.579
Yr 5	$2.656	$2.656	$2.656	$2.656	$2.656	$2.656	$2.656	$2.656	$2.656
Yr 6	$2.736	$2.736	$2.736	$2.736	$2.736	$2.736	$2.736	$2.736	$2.736
Yr 7	$2.818	$2.818	$2.818	$2.818	$2.818	$2.818	$2.818	$2.818	$2.818
Yr 8	$2.903	$2.903	$2.903	$2.903	$2.903	$2.903	$2.903	$2.903	$2.903
Yr 9	$2.990	$2.990	$2.990	$2.990	$2.990	$2.990	$2.990	$2.990	$2.990
Yr 10	$3.079	$3.079	$3.079	$3.079	$3.079	$3.079	$3.079	$3.079	$3.079
Wood Chips $/Equiv Gal									
Base Yr/Yr 1	$0.532								
Yr 2	$0.548								
Yr 3	$0.564								
Yr 4	$0.581								
Yr 5	$0.599								
Yr 6	$0.617								
Yr 7	$0.635								
Yr 8	$0.654								
Yr 9	$0.674								
Yr 10	$0.694								
Water $/CCF									
Base Yr/Yr 1	$6.404	$6.492	$7.023	$7.884	$7.001				
Yr 2	$6.596	$6.687	$7.234	$8.121	$7.211				
Yr 3	$6.794	$6.887	$7.451	$8.364	$7.427				
Yr 4	$6.998	$7.094	$7.674	$8.615	$7.650				
Yr 5	$7.208	$7.307	$7.904	$8.874	$7.880				
Yr 6	$7.424	$7.526	$8.142	$9.140	$8.116				
Yr 7	$7.647	$7.752	$8.386	$9.414	$8.360				
Yr 8	$7.876	$7.984	$8.637	$9.696	$8.610				
Yr 9	$8.112	$8.224	$8.897	$9.987	$8.869				
Yr 10	$8.356	$8.471	$9.163	$10.287	$9.135				

2.0 Summary

Total Cost Avoidance Summary

Year 2 Results

Energy Cost Avoidance	$	122,033
Operational Savings *(stipulated, 3% escalation/yr)*	$	51,730
Total Cost Avoidance	$	173,763
Annual Guarantee - Original	$	173,987
Change Order 001 signed 6/19/08	$	(1,429)
Change Order 002 signed 9/24/08	$	(7,565)
Revised Annual Guarantee	$	164,993
Net Results	$	8,770
Percent of Plan		105%

Cumulative Results

TIME PERIOD		TOTAL COST AVOIDANCE	ANNUAL GUARANTEE	NET RESULTS*
Year 1	11/08 - 10/09	$ 169,227	$ 160,712	$ 8,515
Year 2	11/09 - 10/10	$ 173,763	$ 164,993	$ 8,770
Year 3	11/10 - 10/11			
Year 4	11/11 - 10/12			
Year 5	11/12 - 10/13			
Year 6	11/13 - 10/14			
Year 7	11/14 - 10/15			
Year 8	11/15 - 10/16			
Year 9	11/16 - 10/17			
Year 10	11/17 - 10/18			
TOTAL		**$ 342,990**	**$ 325,705**	**$ 17,285**

*Per performance contract Att. F, excess savings each year cannot be carried forward

Energy Cost Avoidance Summary

Year 2 Results

Energy Cost Avoidance	$	122,033
Adjustments	$	-
Total Energy Cost Avoidance	$	122,033
Annual Energy Guarantee - Original	$	116,743
Change Order 001 signed 6/19/08	$	(1,429)
Change Order 002 signed 9/24/08	$	(2,051)
Revised Annual Energy Guarantee	$	113,263
Net Results	$	8,770
Percent of Plan		108%

Cumulative Results

TIME PERIOD		ENERGY COST AVOIDANCE	ANNUAL ENERGY GUARANTEE	NET RESULTS*
Year 1	11/08 - 10/09	$ 118,479	$ 109,964	$ 8,515
Year 2	11/09 - 10/10	$ 122,033	$ 113,263	$ 8,770
Year 3	11/10 - 10/11			
Year 4	11/11 - 10/12			
Year 5	11/12 - 10/13			
Year 6	11/13 - 10/14			
Year 7	11/14 - 10/15			
Year 8	11/15 - 10/16			
Year 9	11/16 - 10/17			
Year 10	11/17 - 10/18			
TOTAL		**$ 240,512**	**$ 223,227**	**$ 17,285**

*Per performance contract Att. F, excess savings each year cannot be carried forward

Annual Emissions & Environmental Impact

Hartford, VT Schools

Annual Period: 11/09 - 10/10

Zip Code 05301

The following avoided energy usage and pollution benefits have been quantified:

Annual Electric Usage Avoidance	479,009	kWh
Annual Fuel Usage Avoidance	28,620	Therms

Annual Greenhouse Gas Emissions Reduction

CO_2	788,267	pounds
SO_2	1,203	pounds
NOx	438	pounds

CO_2	Carbon Dioxide is a normal atmospheric component; however, increased levels are likely to cause future climate changes.
SO_2	Sulphur Dioxide - Associated with visible pollution (haze) and acid rain.
NO_x	Oxides of Nitrogen - Created when nitrogen is burned as part of the combustion process. One of the main causes of ozone (smog); also associated with acid rain.

Environmental Impact

The annual greenhouse gas emissions reduction quantified is equivalent to one of the following:

27 Number of passenger cars' annual greenhouse gas emissions
16,097 Gallons of gasoline consumed CO_2 emissions
333 Barrels of oil consumed CO_2 emissions
12 Number of homes' energy use CO_2 Emissions for one year
3,669 Number of tree seedlings grown for 10 years carbon sequestered
31 Acres of pine or fir forests carbon sequestered annually
1 Acres of forest preserved from deforestation carbon sequestered annually
5,963 Number of propane cylinders used for home barbeques CO_2 emissions
1 Number of railcars' worth of coal burned CO_2 emissions
48 Tons of waste - Greenhouse gas emissions avoided by recycling instead of sending it to the landfill

Based on the US Environmental Protection Agency - Clean Energy Power Profiler

Energy Savings Tips

The Goal

- Eliminate wasted energy in buildings while ensuring a comfortable and safe learning environment for all students and staff.
- Educate every student and employee about contributing to energy efficiency so that every person will be an energy saver, as well as an energy user.

General Energy Savings Tips

- Be sure all automatic controls are in good working condition, calibrated properly and reviewed often.
- Monthly, review time schedules in the programmable thermostats. Make the most of your energy management system or programmable thermostats by turning heating/cooling systems off during unoccupied periods, including holidays, and maintaining energy-saving temperature setpoints. Start a shutdown list and hand out for use at each site during holidays and summertime. *Did you know that:*

  Heating and cooling an average-sized elementary school is like heating and cooling 40 average-sized homes?

  For every hour that an HVAC system operates at an average-sized elementary school when no one is there, it costs about $15 to heat and $14 to cool?

  Every degree a thermostat is lowered during heating season or raised during cooling season decreases costs by 3-5%?
- Turn lights off in all areas, especially gyms, cafeterias, and auditoriums, when they are not occupied; instruct custodians to shut lights off as soon as classes end and turn them on again in an area only while cleaning it. (The average classroom can save $25 a year by shutting off the lights for 2 additional hours each day.)
- Use daylight (it's free) to enhance lighting and reduce the use of electric light.
- Turn off computers, copiers, and other office machines every night, and make sure they are set on "energy-saver" mode while in use.
- Install Vending Misers on canned/bottled drink and other vending machines to turn them off 12 hours a day. Permanently de-lamp vending machines and disconnect ballasts, and turn them off completely during months when school is not in session. (Note: The cost of operating vending machines can exceed the shared revenue provided by the vendor.)
- Turn off exhaust fans in kitchens and bathrooms during unoccupied periods.
- Use equipment that consumes high amounts of electricity before noon whenever possible. This helps cut peak demand charges on a school's utility bill. This type of equipment includes kilns, electric ovens, sawdust collectors, and sports lights.
- Limit the use of small refrigerators in classrooms. Approximate annual cost is $75 to $90 per unit.

Energy Savings Tips

Prepare for Heating Season

- Clean boilers, test all heating-related equipment, and check piping for steam leaks to be sure everything is in good working order *before* it is needed.
- Keep hot water temperatures to 120-130 degrees Fahrenheit for sinks and showers.
- Routinely inspect steam traps and repair those not operating properly. Avoid the domino effect of malfunctioning steam traps:
  Steam trap failure = Loss of condensate = Increased make-up water = Increased use of costly treatment chemicals and Increased fuel consumption
- Insulate, caulk and repair or replace weather stripping around doors and windows to reduce heat loss.
- Be sure that building doors, as well as individual classroom and office doors, are closed when heating equipment is in operation. Repair gaps in doors.
- Space heaters use 1000 watts per hour. Flat leg or foot warmers may be substituted and use much less energy (approximately 100 watts per hour). These devices should be turned off at the end of the day.
- Negotiate fuel contracts whenever possible to avoid the unpredictable and frequent price spikes that occur each year.

Cooling Season Tips

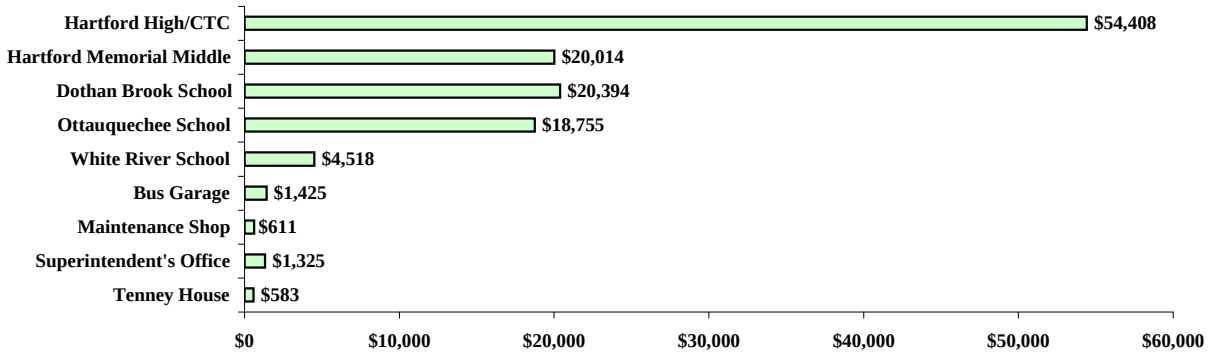
- If your air conditioning systems have automatic temperature controls, make sure outside air dampers are closed during unoccupied times.
- Be sure that building doors, as well as individual classroom and office doors, are closed when air conditioning equipment is in operation. Repair gaps in doors.
- Where cross-ventilation is available during mild weather, shut down air conditioning equipment and open windows and doors.
- Do not turn lights on unless needed, as they add heat to the building.

3.0 Review Detail

Energy Cost Avoidance by Location

Year 2

Hartford High/CTC			
Opt. A - Electric	Lighting	$	24,122
Opt. A - Water	Water Conservation		6,513
Opt. C - Fuel Oil	Fuel Oil Savings		23,773
		$	**54,408**
Hartford Memorial Middle			
Opt. A - Electric	Lighting	$	8,469
Opt. A - Water	Water Conservation		2,819
Opt. C - Fuel Oil	Fuel Oil/Wood Savings		8,726
		$	**20,014**
Dothan Brook School			
Opt. A - Electric	Lighting	$	13,187
Opt. A - Water	Water Conservation		1,870
Opt. C - Fuel Oil	Fuel Oil Savings		5,338
		$	**20,394**
Ottauquechee School			
Opt. A - Electric	Lighting	$	11,168
Opt. A - Water	Water Conservation		2,099
Opt. C - Fuel Oil	Fuel Oil Savings		5,487
		$	**18,755**
White River School			
Opt. C - Fuel Oil	Fuel Oil Savings	$	4,518
		$	**4,518**
Bus Garage			
Opt. A - Electric	Lighting - stipulated	$	754
Opt. C - Fuel Oil	Fuel Oil Savings - stipulated		671
		$	**1,425**
Maintenance Shop			
Opt. A - Electric	Lighting - stipulated	$	234
Opt. C - Fuel Oil	Fuel Oil Savings - stipulated		377
		$	**611**
Superintendent's Office			
Opt. A - Electric	Lighting - stipulated	$	962
Opt. C - Fuel Oil	Fuel Oil Savings - stipulated		362
		$	**1,325**
Tenney House			
Opt. C - Fuel Oil	Fuel Oil Savings - stipulated	$	583
		$	**583**
		$	**122,033**



ECM #3 - Lighting

New energy efficient lighting fixtures were installed in place of the existing lighting systems. This retrofit included replacing standard T12 and T8 fluorescent lamps and ballasts with new T8 electronic lamps and ballasts in existing fluorescent fixtures, as well as replacing incandescent light fixtures with either new fluorescent, surface mount fixtures, or retrofitted with screw-in fluorescent lamps. Exit signs were replaced with new, high efficiency LED exit signs and occupancy sensors were installed.

This retrofit has resulted in reduced electrical usage for the School District. The lighting retrofit detail in Exhibit A-1 of the performance contract lists the installation and savings details, as well as the stipulated burn hours and actual baseline and post-retrofit input power for each room where lighting was retrofitted. A review of this detail, along with spot checks of the retrofit itself, indicate that the retrofit was properly implemented and is capable of achieving the desired results. The actual savings from this ECM are summarized in the table below. See Section 5.0 Appendix for the pre-post lighting as-built detail for the schools listed below. The other buildings' unit avoidance is stipulated as achieved per Att. D of the performance contract.

Year 2

Electric Savings - Option A (Measured)

Location	Contract Rate $/kWh (Blended)	kW/mo Saved	Annual kWh Saved	$ Savings
Hartford High/CTC	$0.113	58.61	212,902	$ 24,122
Hartford Memorial Middle	$0.113	23.72	74,746	$ 8,469
Dothan Brook School	$0.133	29.47	99,246	$ 13,187
Ottauquechee School	$0.145	23.88	76,902	$ 11,168
TOTALS		**135.68**	**463,796**	**$ 56,946**

Electric Savings - Option A (Stipulated per Contract Att. D)

Location	Contract Rate $/kWh (Blended)	kW/mo Saved	Annual kWh Saved	$ Savings
Bus Garage	$0.136	2.29	5,548	$ 754
Maintenance Shop	$0.113	1.12	2,069	$ 234
Superintendent's Office	$0.127	3.52	7,596	$ 962
TOTALS		**6.94**	**15,213**	**$ 1,951**

Total Lighting Savings	**$ 58,897**

ECM #4 - Water Conservation

New water-saving bathroom fixtures were installed in place of some of the existing fixtures. This retrofit included ULF toilet installations, urinal valve replacements, non-aerating faucet flow restrictors, and 2.0 gpm showerheads.

This retrofit has resulted in reduced water usage for the School District. The water retrofit detail in Exhibit G-3 of the performance contract Change Order 001 lists the installation and savings details for each school where water fixtures were retrofitted. A review of this detail, along with spot checks of the retrofit itself, indicate that the retrofit was properly implemented and is capable of achieving the desired results. The actual savings from this ECM are summarized in the table below. See Section 5.0 Appendix for the pre-post as-built detail.

Year 2

Water/Sewer Savings - Option A

Location	Contract Rate $/CCF	Annual Cubic Ft Saved	$ Savings
Hartford High/CTC	$6.596	98,738	$ 6,513
Hartford Memorial Middle	$6.687	42,164	$ 2,819
Dothan Brook School	$7.234	25,849	$ 1,870
Ottauquechee School	$8.121	25,849	$ 2,099
TOTALS		**192,599**	**$ 13,301**

Option C Fuel Savings

Per the performance contract, fuel savings is to be determined by the Option C whole building utility analysis method. As part of this analysis, Metrix™ utility software is used to compare baseline usage, adjusted for current weather and billing days, with current guarantee year usage. Since fuel oil and wood chips are the sources of fuel, we are limited in the accuracy of the unit avoidance calculation by having to use deliveries as the measurement for usage. The timing of deliveries can skew savings from one year to the next, depending on when they occur during the audit period. Over time, however, this tank swing will even out.

Honeywell's analysis of raw delivery data and weather-adjusted data indicates that there has been a steady increase in oil consumption since the base year. Exhibit G-2 of the contract provides for the monthly delivery by Hartford School District to Honeywell of fuel oil tank readings or oil data printouts, in order that oil usage can be more easily monitored and analyzed. These readings were provided to Honeywell in November 2010, after the end of the second guarantee year, and not enough data could be gleaned from them to determine if the fuel oil company delivery billing histories used to calculate unit avoidance were faulty with regard to the location of deliveries or ficticious billings.

Through multiple site visits by Honeywell personnel, however, support for the proper implementation and functioning of the Honeywell fuel-related ECMs has been gathered, and several equipment issues have been identified which either preclude proper analysis of building controls or have contributed to increased fuel usage in the schools. The following pages provide greater detail.

Due to these issues, Honeywell has chosen to record Option C savings below as the guarantee savings per Attachment G of the performance contract.

Year 2

Fuel Savings - Option C

Location	HVAC Upgrades	Controls Upgrades	Water Conservation	Building Envelope	HVAC/ Pneumatics Repairs	$ Savings
Hartford High/CTC	$3,571	$4,242	$426	$15,484	$49	$ 23,773
Hartford Memorial Middle	$1,332	$2,804	$1,094	$3,447	$49	$ 8,726
Dothan Brook School		$1,662	$111	$3,515	$49	$ 5,338
Ottauquechee School		$2,083	$111	$3,244	$49	$ 5,487
White River School		$663		$3,806	$49	$ 4,518
TOTALS	**$4,904**	**$11,454**	**$1,743**	**$29,497**	**$245**	**$ 47,842**

Site Visit Observations

- **Sustainability Actions by School District**
  - Ionizer used in two schools (Dothan Brook & High) for cleaning
  - Low pesticide use on fields
  - 3 schools (High, Dothan Brook & OQS) have single-stream recycling
  - Diligent facilities person helps reduce unnecessary electrical use:
    - If staff want holiday lights, they need to unplug something else!
    - At completion of Honeywell project, a memo was circulated requesting all coffee pots, personal heaters, microwaves etc., be removed from buildings. Building occupants still seem compliant.
    - Information provided to the District regarding Efficiency Vermont and possible grants for buying flat screen monitors to replace older CRT models.

- **Hartford High School**

  - Domestic Hot Water was used this past summer and worked well
  - Wood furnace started working 11/30/2010
  - Open windows found

- **Hartford Memorial Middle**
  - Boiler #1 has 5639.1 hours on it. Be sure to use both boilers equally, which apparently is being done now. *(See Section 5.0 Appendix for district-wide boiler efficiency test results.)*
  - Open windows found

- **Dothan Brook School**
  - Thermostat in boiler room no longer changed; set to 75 degrees as requested. *(Pictures of two settings on next page)*
  - Boiler on left now running (was not running during site visit 10/09)
  - Paper over light switch in gym, saying it is on motion sensors. Can save additional energy by turning off lights when not in use immediately instead of waiting for sensor to turn them off. Facilities keeps taking this sign off, but someone keeps putting it back up!
  - Dothan Brook will soon be web-based so building can be remotely turned down for snow days.

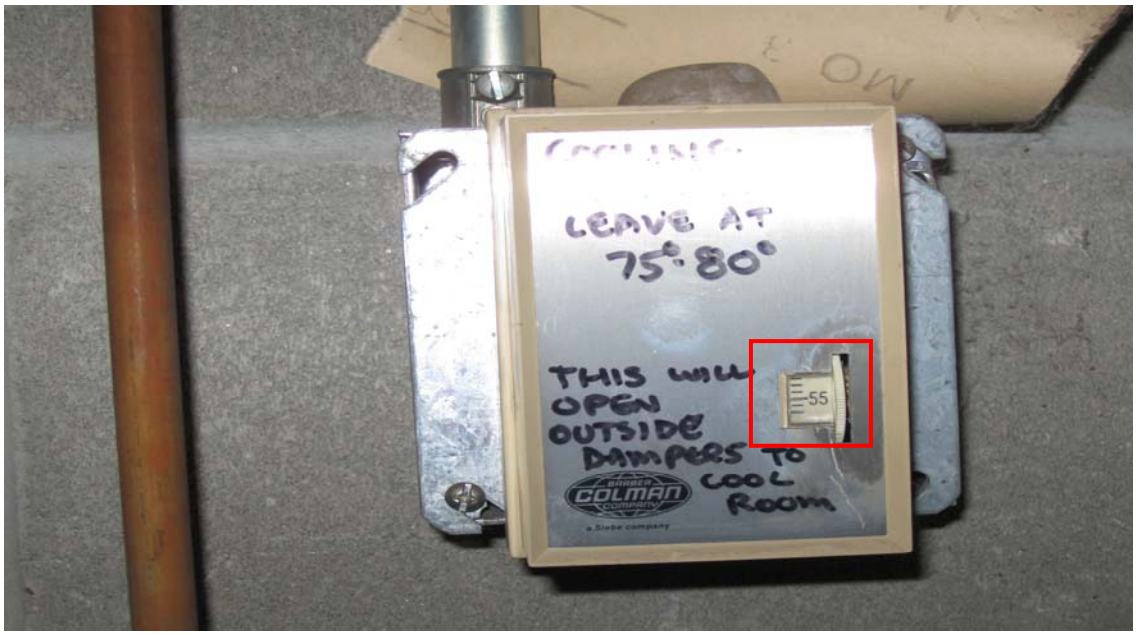
- **Ottauquechee School**

  - Pre-K window open all day; teachers say Health Dept says its better for children
  - Only half the lights on in the kitchen/café area - Bravo!

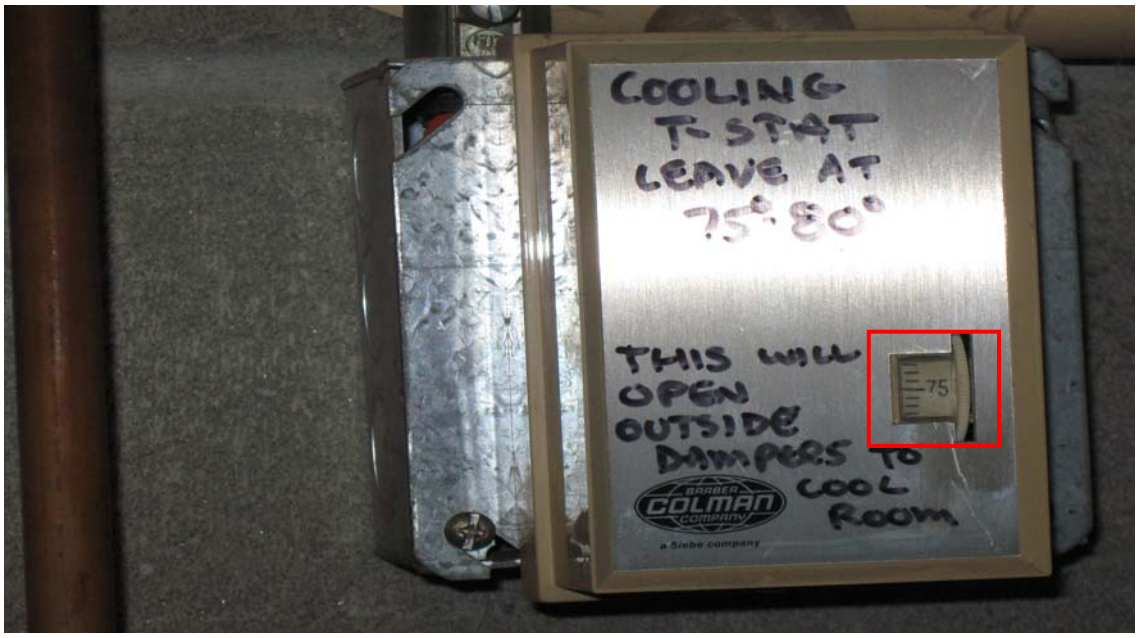
- **White River School**
  - Many steam traps inaccessible, so impossible to repair or replace

Site Visit Observations

Building Issues



Dothan Brook Thermostat Setting - BEFORE



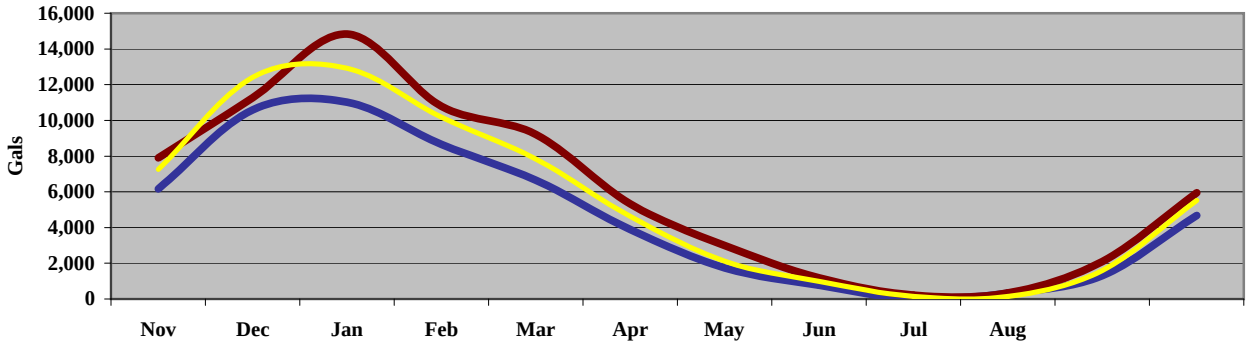
Dothan Brook Thermostat Setting - AFTER

Baseline Comparison

Note: Deliveries are distributed over the year based on Heating Degree Days.
Year 1 deliveries shown below have not been adjusted to reflect current year weather.

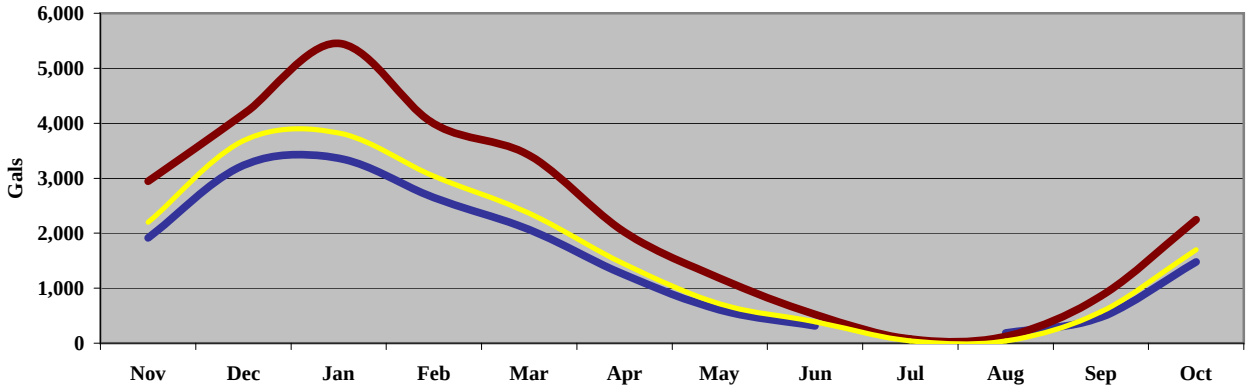
Hartford High/CTC

Fuel Oil Delivery Detail (incl. wood chip equiv. gal.)



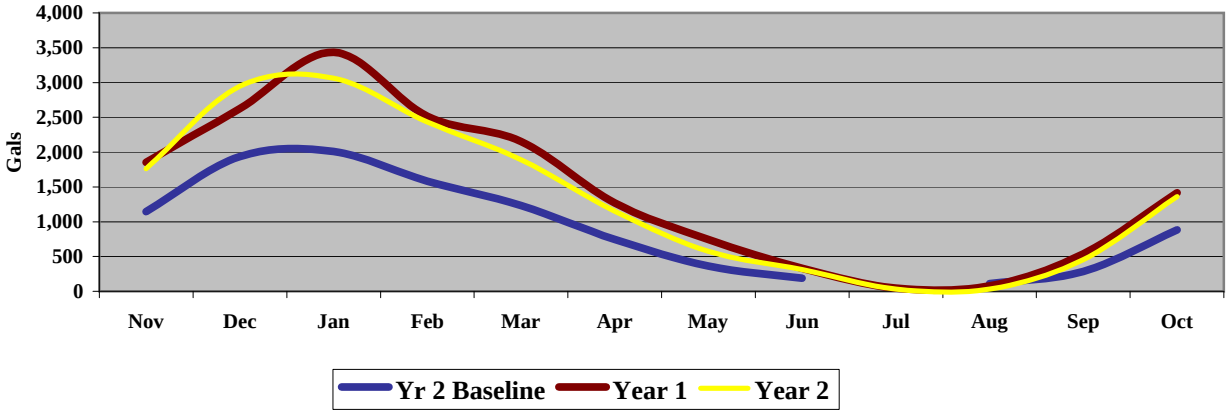
Hartford Memorial Middle

Fuel Oil Delivery Detail



Dothan Brook School

Fuel Oil Delivery Detail

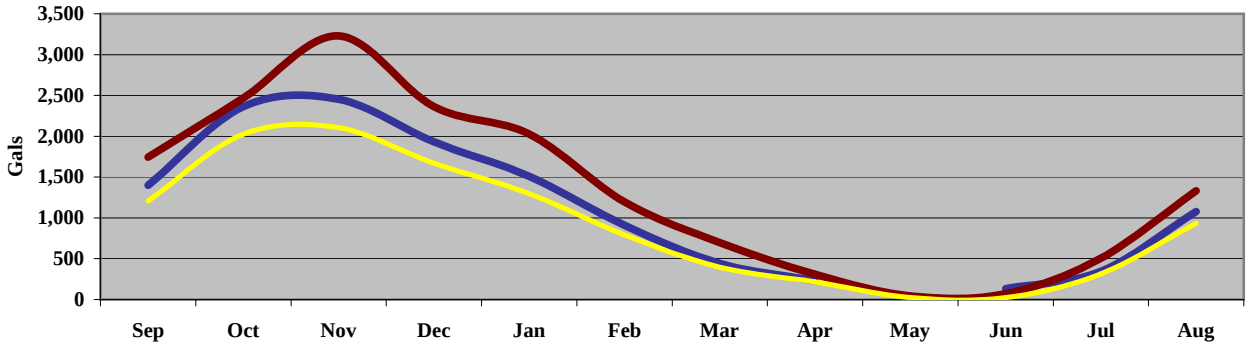


Baseline Comparison

Note: Deliveries are distributed over the year based on Heating Degree Days.
Year 1 deliveries shown below have not been adjusted to reflect current year weather.

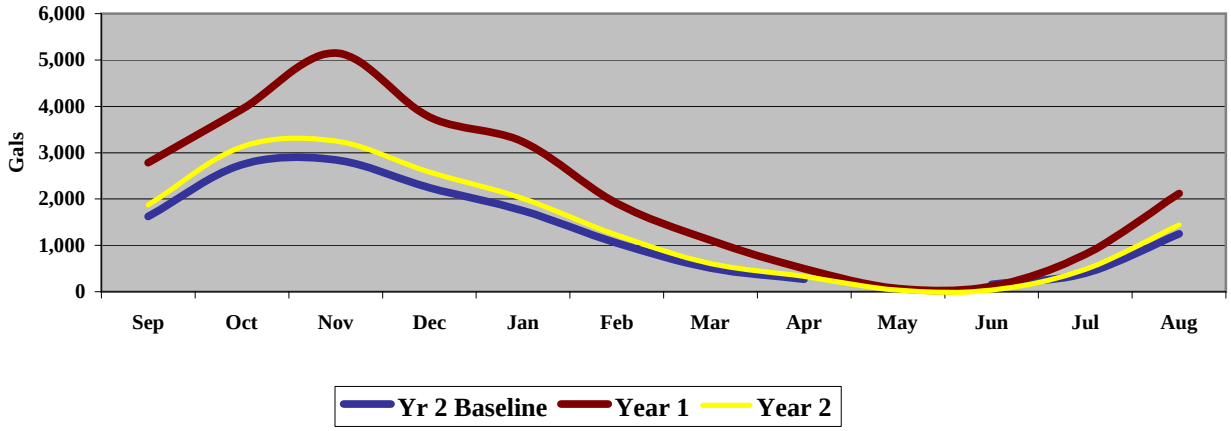
Ottauquechee School

Fuel Oil Delivery Detail



White River School

Fuel Oil Delivery Detail



Fuel Oil Deliveries Analysis

Hartford High/HACTC

		Distribute Oil Deliveries by HDD			
		Delivered Units	HDD	Oil Gal	Wood Equiv Gal
3-yr Avg Base		81,310	22,165	81,313	111,982
	Wood Chips	111,978	gal equiv.		
	Total gal	193,289			
Interim/Install Pd		36,202	8,230	36,203	32,276
	Wood Chips	32,273	gal equiv.		
	Total gal	68,475			
Guar Year 1		48,006	7,413	48,006	24,113
	Wood Chips	24,113	gal equiv.		
	Total gal	72,118			
Guar Year 2		30,987	6,377	30,986	34,698
	Wood Chips	34,698	gal equiv.		
	Total gal	65,685			

Gallons per Heating Degree Day

3-yr Avg Base Yr	**8.72**
Interim/Install Pd	**8.32**
Interim/Instl,Yr 1 Combined	**8.99**
Guarantee Year 1	**9.73**
Guarantee Year 2	**10.30**

Hartford Middle

	Distribute Oil Deliveries by HDD	
	Delivered Units	HDD
3-yr Avg Base	60,296	22,165
Interim/Install Pd	29,126	8,230
Guar Year 1	26,993	7,413
Guar Year 2	20,001	6,377

Gallons per Heating Degree Day

3-yr Avg Base Yr	**2.72**
Interim/Install Pd	**3.54**
Interim/Instl,Yr 1 Combined	**3.59**
Guarantee Year 1	**3.64**
Guarantee Year 2	**3.14**

Dothan Brook School

	Distribute Oil Deliveries by HDD	
	Delivered Units	HDD
3-yr Avg Base	36,032	22,165
Interim/Install Pd	14,062	8,230
Guar Year 1	17,000	7,413
Guar Year 2	16,003	6,377

Gallons per Heating Degree Day

3-yr Avg Base Yr	**1.63**
Interim/Install Pd	**1.71**
Interim/Instl,Yr 1 Combined	**1.99**
Guarantee Year 1	**2.29**
Guarantee Year 2	**2.51**

Ottauquechee School

	Distribute Oil Deliveries by HDD	
	Delivered Units	HDD
3-yr Avg Base	44,000	22,165
Interim/Install Pd	7,000	8,230
Guar Year 1	15,990	7,413
Guar Year 2	10,999	6,377

Gallons per Heating Degree Day

3-yr Avg Base Yr	**1.99**
Interim/Install Pd	**0.85**
Interim/Instl,Yr 1 Combined	**1.47**
Guarantee Year 1	**2.16**
Guarantee Year 2	**1.72**

Fuel Oil Deliveries Analysis

White River School

Distribute Oil Deliveries by HDD

	Delivered Units	HDD
3-yr Avg Base	51,038	22,165
Interim/Install Pd	7,000	8,230
Guar Year 1	25,515	7,413
Guar Year 2	16,994	6,377

Gallons per Heating Degree Day

3-yr Avg Base Yr	**2.30**
Interim/Install Pd	**0.85**
Interim/Instl,Yr 1 Combined	**2.08**
Guarantee Year 1	**3.44**

4.0 Adjustments

Adjustments Summary

This Space Reserved for Operational Adjustments

5.0 Appendix

Fuel Oil Distribution by HDD

Hartford School District
Metrix Oil Distribution by Heating Degree Day (HDD)
Year 2: 11/09 - 10/10

Hartford High/CTC

Distribute Oil Deliveries by HDD

	Delivered Gal	HDD	Heating Oil Gal	DHW Oil Gal	Total Oil Gal	Wood Chip Equiv Gal
Nov-09		708	3,096	310	3,406	3,852
Dec-09	5,988	1234	5,394	310	5,704	6,712
Jan-10	6,000	1285	5,618	310	5,928	6,989
Feb-10		1005	4,395	310	4,705	5,468
Mar-10		766	3,348	310	3,658	4,165
Apr-10		439	1,920	310	2,230	2,389
May-10	6,000	183	800	310	1,110	996
Jun-10		68	297	310	607	370
Jul-10		14	61		61	76
Aug-10	6,000	14	61		61	76
Sep-10		132	575	310	885	716
Oct-10	7,000	531	2,322	310	2,632	2,889
	30,987	6,377	27,887	3,099	30,986	34,698
Wood Chips	34,699	gal equiv.				
Total Gal	65,686		9.8	Gal/HDD		

Hartford Middle

Distribute Oil Deliveries by HDD

	Delivered Gal	HDD	Heating Oil Gal	DHW Oil Gal	Total Oil Gal
Nov-09		708	1,999	200	2,199
Dec-09	5,500	1234	3,482	200	3,682
Jan-10	6,000	1285	3,626	200	3,826
Feb-10		1005	2,837	200	3,037
Mar-10	5,001	766	2,161	200	2,361
Apr-10		439	1,239	200	1,439
May-10		183	517	200	717
Jun-10		68	192	200	392
Jul-10		14	40		40
Aug-10		14	40		40
Sep-10		132	371	200	571
Oct-10	3,500	531	1,499	200	1,699
	20,001	6,377	18,003	2,000	20,003
			2.8	Gal/HDD	

Dothan Brook School

Distribute Oil Deliveries by HDD

	Delivered Gal	HDD	Heating Oil Gal	DHW Oil Gal	Total Oil Gal
Nov-09	5,999	708	1,599	160	1,759
Dec-09		1234	2,786	160	2,946
Jan-10	5,002	1285	2,901	160	3,061
Feb-10		1005	2,270	160	2,430
Mar-10	5,002	766	1,729	160	1,889
Apr-10		439	991	160	1,151
May-10		183	413	160	573
Jun-10		68	154	160	314
Jul-10		14	32		32
Aug-10		14	32		32
Sep-10		132	297	160	457
Oct-10		531	1,199	160	1,359
	16,003	6,377	14,403	1,600	16,003
			2.3	Gal/HDD	

Ottauquechee School

Distribute Oil Deliveries by HDD

	Delivered Gal	HDD	Heating Oil Gal	DHW Oil Gal	Total Oil Gal
Nov-09		708	1,099	110	1,209
Dec-09		1234	1,915	110	2,025
Jan-10	5,998	1285	1,994	110	2,104
Feb-10		1005	1,560	110	1,670
Mar-10		766	1,188	110	1,298
Apr-10	5,001	439	681	110	791
May-10		183	284	110	394
Jun-10		68	106	110	216
Jul-10		14	22		22
Aug-10		14	22		22
Sep-10		132	204	110	314
Oct-10		531	824	110	934
	10,999	6,377	9,899	1,100	10,999
			1.6	Gal/HDD	

White River School

Distribute Oil Deliveries by HDD

	Delivered Gal	HDD	Heating Oil Gal	DHW Oil Gal	Total Oil Gal
Nov-09		708	1,698	170	1,868
Dec-09	8,990	1234	2,958	170	3,128
Jan-10		1285	3,081	170	3,251
Feb-10	8,004	1005	2,410	170	2,580
Mar-10		766	1,836	170	2,006
Apr-10		439	1,053	170	1,223
May-10		183	439	170	609
Jun-10		68	163	170	333
Jul-10		14	34		34
Aug-10		14	34		34
Sep-10		132	315	170	485
Oct-10		531	1,274	170	1,444
	16,994	6,377	15,295	1,699	16,994
			2.4	Gal/HDD	

Fuel Oil Distribution by HDD

Hartford School District
Metrix Oil Distribution by Heating Degree Day (HDD)
Year 1: 11/08 - 10/09

Hartford High/CTC

Distribute Oil Deliveries by HDD

	Delivered Gal	HDD	Heating Oil Gal	DHW Oil Gal	Total Oil Gal	Wood Chip Equiv Gal
Nov-08	7,001	817	4,759	480	5,239	2,656
Dec-08	7,011	1189	6,930	480	7,410	3,868
Jan-09	12,996	1582	9,218	480	9,698	5,145
Feb-09		1135	6,616	480	7,096	3,692
Mar-09		961	5,598	480	6,078	3,124
Apr-09	4,000	534	3,110	480	3,590	1,735
May-09		278	1,617	480	2,097	903
Jun-09	3,997	78	452	480	932	252
Jul-09		23	134		134	75
Aug-09		37	216		216	120
Sep-09	7,000	179	1,040	480	1,520	581
Oct-09	6,002	603	3,515	480	3,995	1,962
	48,006	7,413	43,205	4,801	48,006	24,113
Wood Chips	24,113	gal equiv.				
Total Gal	72,118		9.1	Gal/HDD		

Hartford Middle

Distribute Oil Deliveries by HDD

	Delivered Gal	HDD	Heating Oil Gal	DHW Oil Gal	Total Oil Gal
Nov-08		817	2,676	270	2,946
Dec-08	6,989	1189	3,897	270	4,167
Jan-09	6,000	1582	5,183	270	5,453
Feb-09		1135	3,720	270	3,990
Mar-09	4,002	961	3,148	270	3,418
Apr-09	4,001	534	1,749	270	2,019
May-09		278	909	270	1,179
Jun-09		78	254	270	524
Jul-09		23	75		75
Aug-09		37	121		121
Sep-09		179	585	270	855
Oct-09	6,002	603	1,976	270	2,246
	26,993	7,413	24,293	2,699	26,992
			3.3	Gal/HDD	

Dothan Brook School

Distribute Oil Deliveries by HDD

	Delivered Gal	HDD	Heating Oil Gal	DHW Oil Gal	Total Oil Gal
Nov-08	7,000	817	1,685	170	1,855
Dec-08		1189	2,454	170	2,624
Jan-09	6,000	1582	3,264	170	3,434
Feb-09		1135	2,343	170	2,513
Mar-09	4,000	961	1,983	170	2,153
Apr-09		534	1,101	170	1,271
May-09		278	573	170	743
Jun-09		78	160	170	330
Jul-09		23	47		47
Aug-09		37	76		76
Sep-09		179	368	170	538
Oct-09		603	1,245	170	1,415
	17,000	7,413	15,299	1,700	16,999
			2.1	Gal/HDD	

Ottauquechee School

Distribute Oil Deliveries by HDD

	Delivered Gal	HDD	Heating Oil Gal	DHW Oil Gal	Total Oil Gal
Nov-08		817	1,585	160	1,745
Dec-08		1189	2,308	160	2,468
Jan-09	5,987	1582	3,070	160	3,230
Feb-09		1135	2,204	160	2,364
Mar-09	4,000	961	1,865	160	2,025
Apr-09		534	1,036	160	1,196
May-09		278	539	160	699
Jun-09		78	150	160	310
Jul-09		23	45		45
Aug-09		37	72		72
Sep-09		179	347	160	507
Oct-09	6,003	603	1,171	160	1,331
	15,990	7,413	14,392	1,599	15,991
			1.9	Gal/HDD	

White River School

Distribute Oil Deliveries by HDD

	Delivered Gal	HDD	Heating Oil Gal	DHW Oil Gal	Total Oil Gal
Nov-08	9,513	817	2,529	255	2,784
Dec-08		1189	3,683	255	3,938
Jan-09	9,002	1582	4,899	255	5,154
Feb-09		1135	3,516	255	3,771
Mar-09	3,000	961	2,976	255	3,231
Apr-09		534	1,653	255	1,908
May-09	4,001	278	860	255	1,115
Jun-09		78	240	255	495
Jul-09		23	71		71
Aug-09		37	115		115
Sep-09		179	553	255	808
Oct-09		603	1,868	255	2,123
	25,515	7,413	22,963	2,552	25,515
			3.1	Gal/HDD	

ECM #3
Lighting As-Built
Savings Detail

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
1	OFFICE	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	2		2	120.0	0.24	Retrofit	Retrofit strip with 2 4' lamps, 1 2lamp ballast and 2 4' reflectors	2L4' T8/ELE (STD LOW)	2	44.0	0.09	0.15	2376	2376	361
2	OFFICE	2L 4FT T8 ELE FIXT	R14STRPLR	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	Retrofit strip with 1 4' lamp, 1 lamp ballast and 1 4' reflector	1L' T8/ELE/REFL (STD LOW)	2	22.0	0.04	0.07	2376	2376	181
3	HALLWAY	CF 2L 26W	NW	26W CF/HW-2	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3564	3564	0
4	OFFICE	4L 4FT T8 ELE FIXT	R4	4L4' T8/ELE	2		2	120.0	0.24	Retrofit	B/L RETROFIT- use 1- 4 Lamp t8 ballast, 4 t8 lamps, and new sockets.	4L4' T8/ELE	2	87.0	0.17	0.06	2376	2376	157
5	OFFICE	2L 4FT T8 ELE FIXT	R2	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	B/L RETROFIT- use 1, 2 Lamp t8 ballast, 2 t8 lamps, and new sockets.	2L4' T8/ELE (STD LOW)	1	52.0	0.05	0.01	2376	2376	19
6	STORAGE	2L 4FT T8 ELE FIXT	R14STRPLR	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	Retrofit strip with 1 4' lamp, 1 lamp ballast and 1 4' reflector	1L' T8/ELE/REFL (STD LOW)	1	22.0	0.02	0.04	1584	1584	60
7	OFFICE	4L 4FT T8 ELE FIXT	R4	4L4' T8/ELE	1		1	120.0	0.12	Retrofit	B/L RETROFIT- use 1- 4 Lamp t8 ballast, 4 t8 lamps, and new sockets.	4L4' T8/ELE	1	87.0	0.09	0.03	2376	2376	78
8	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1584	1584	0
9	STORAGE	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	3		3	120.0	0.36	Retrofit	Retrofit strip with 2 4' lamps, 1 2lamp ballast and 2 4' reflectors	2L4' T8/ELE (STD LOW)	3	44.0	0.13	0.22	1584	1584	361
10	STORAGE	2L 4FT T8 ELE FIXT	R14STRPLR	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	Retrofit strip with 1 4' lamp, 1 lamp ballast and 1 4' reflector	1L' T8/ELE/REFL (STD LOW)	2	22.0	0.04	0.07	1584	1584	120
11	HALLWAY	CF 2L 26W	NW	26W CF/HW-2	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3564	3564	0
12	STORAGE	2L 4FT T8 ELE FIXT	R14STRPLR	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	Retrofit strip with 1 4' lamp, 1 lamp ballast and 1 4' reflector	1L' T8/ELE/REFL (STD LOW)	2	22.0	0.04	0.07	1584	1584	120
13	LOCKER ROOM	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	3		4	120.0	0.36	Retrofit	Retrofit strip with 2 4' lamps, 1 2lamp ballast and 2 4' reflectors	2L4' T8/ELE (STD LOW)	3	44.0	0.13	0.22	2277	2277	519
14	LOCKER ROOM	2L 4FT T8 ELE FIXT	R14STRPLR	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	Retrofit strip with 1 4' lamp, 1 lamp ballast and 1 4' reflector	1L' T8/ELE/REFL (STD LOW)	1	22.0	0.02	0.04	2277	2277	87
15	LOCKER ROOM	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	4		4	120.0	0.48	Retrofit	Retrofit strip with 2 4' lamps, 1 2lamp ballast and 2 4' reflectors	2L4' T8/ELE (STD LOW)	4	44.0	0.18	0.30	2277	2277	692
16	LOCKER ROOM	2L 4FT T8 ELE FIXT	R14STRPLR	2L4' T8/ELE	4		4	60.0	0.24	Retrofit	Retrofit strip with 1 4' lamp, 1 lamp ballast and 1 4' reflector	1L' T8/ELE/REFL (STD LOW)	4	22.0	0.09	0.15	2277	2277	346
17	STORAGE	INC 67W-80W	CFSIS25	INCANDESCENT	1		1	75.0	0.08	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	1	25.0	0.03	0.05	1584	1584	79
17	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3564	3564	0
18	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	7		7	60.0	0.42	No work	NO WORK ON THESE FIXTURES	NO WORK	7	60.0	0.42	0.00	3564	3564	0
19	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	5		5	60.0	0.30	No work	NO WORK ON THESE FIXTURES	NO WORK	5	60.0	0.30	0.00	3564	3564	0
20	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1584	1584	0
21	RESTROOM	CF 2L 26W	NW	26W CF/HW-2	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
22	RESTROOM	4L 4FT T8 ELE FIXT	R4	4L4' T8/ELE	2		2	120.0	0.24	Retrofit	B/L RETROFIT- use 1- 4 Lamp t8 ballast, 4 t8 lamps, and new sockets.	4L4' T8/ELE	2	87.0	0.17	0.06	3564	3564	235

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
23	RESTROOM	CF 2L 26W	NW	26W CF/HW-2	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
24	RESTROOM	4L 4FT T8 ELE FIXT	R4	4L4' T8/ELE	2		2	120.0	0.24	Retrofit	B/L RETROFIT- use 1- 4 Lamp t8 ballast, 4 t8 lamps, and new sockets.	4L4' T8/ELE	2	87.0	0.17	0.06	3564	3564	235
25	HALLWAY	3' 1L T12	R31	1L3' STD/STD	6		6	46.0	0.28	Retrofit	B/L-3 RETROFIT- use 1- 1 Lamp t8 ballast, 1 f25 t8 lamp, and new sockets.	1L3' T8/ELE	6	0.0	0.00	0.27	3564	3564	984
26	LOCKER ROOM	4L 4FT T8 ELE FIXT	R4	4L4' T8/ELE	1		1	120.0	0.12	Retrofit	B/L RETROFIT- use 1- 4 Lamp t8 ballast, 4 t8 lamps, and new sockets.	4L4' T8/ELE	1	87.0	0.09	0.03	2277	2277	75
27	LOCKER ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2277	2277	0
28	LOCKER ROOM	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	17		17	120.0	2.04	Retrofit	Retrofit strip with 2 4' lamps, 1 2lamp ballast and 2 4' reflectors	2L4' T8/ELE (STD LOW)	17	44.0	0.75	1.27	2277	2277	2,942
29	OFFICE	4L 4FT T8 ELE FIXT	R2	4L4' T8/ELE	2		4	120.0	0.24	Retrofit	B/L RETROFIT- use 1, 2 Lamp t8 ballast, 2 t8 lamps, and new sockets.	2L4' T8/ELE (STD LOW)	4	52.0	0.21	0.03	2376	2376	76
30	STORAGE	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	1		1	120.0	0.12	Retrofit	Retrofit strip with 2 4' lamps, 1 2lamp ballast and 2 4' reflectors	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.07	1584	1584	120
31	GYMNASIUM	HID-MH-400	NT5INDC4L	MH/FIXT HIGH BAY	36		36	440.0	15.84	New	Install New T5 System custom designed - 4L T5 HO type lamp with cage wireguard, slope back for gym ball setup.	4L T5 SPEC FIXTURE/ELE	36	220.0	7.92	7.76	2277	2277	18,034
32	24	EXIT-LED	NW	EXIT LED	4		4	1.8	0.01	No work	NO WORK ON THESE FIXTURES	NO WORK	4	1.8	0.01	0.00	8672	8672	0
33	LOCKER ROOM	CF 2L 26W	NW	26W CF/HW-2	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2277	2277	0
34	HALLWAY	2L T12 3FT FIXT	R32	2L3' STD/STD	2		2	80.0	0.16	Retrofit	B/L-3 RETROFIT- use 1- 2 Lamp t8 ballast, 2 f25 t8 lamps, and new sockets.	2L3' EE/ELE	2	49.0	0.10	0.06	3564	3564	221
33	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	8		8	60.0	0.48	No work	NO WORK ON THESE FIXTURES	NO WORK	8	60.0	0.48	0.00	3564	3564	0
34	HALLWAY	INC 67W-80W	CFSIS25	INCANDESCENT	2		2	75.0	0.15	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	2	25.0	0.05	0.10	3564	3564	356
35	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
36	STORAGE	CF 2L 26W	NW	26W CF/HW-2	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	1584	1584	0
37	STORAGE	INC 67W-80W	CFSIS25	INCANDESCENT	1		1	75.0	0.08	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	1	25.0	0.03	0.05	1584	1584	79
38	STORAGE	INC 67W-80W	CFSIS25	INCANDESCENT	2		2	75.0	0.15	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	2	25.0	0.05	0.10	1584	1584	158
38	EQUIPMENT ROOM	INC 67W-80W	CFSIS25	INCANDESCENT	7		6	75.0	0.53	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	6	25.0	0.15	0.37	1089	1089	408
39	EQUIPMENT ROOM	INC 67W-80W	CFSIS25	INCANDESCENT	1		1	75.0	0.08	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	1	25.0	0.03	0.05	1089	1089	54
40	EQUIPMENT ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1089	1089	0
41	EQUIPMENT ROOM	INC 67W-80W	CFSIS25	INCANDESCENT	1		1	75.0	0.08	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	1	25.0	0.03	0.05	1089	1089	54
42	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3564	3564	0

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
43	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
44	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3564	3564	0
45	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	9		9	60.0	0.54	No work	NO WORK ON THESE FIXTURES	NO WORK	9	60.0	0.54	0.00	3564	3564	0
46	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
47	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	6		6	60.0	0.36	No work	NO WORK ON THESE FIXTURES	NO WORK	6	60.0	0.36	0.00	2376	2376	0
48	CLASSROOM	2L T5 HO	NW	2L 2' T5	12		12	35.0	0.42	No work	NO WORK ON THESE FIXTURES	NO WORK	12	35.0	0.42	0.00	2178	2178	0
49	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1584	1584	0
50	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
51	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
52	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	7		7	60.0	0.42	No work	NO WORK ON THESE FIXTURES	NO WORK	7	60.0	0.42	0.00	3564	3564	0
53	STORAGE	INC 67W-80W	CFSIS25	INCANDESCENT	1		1	75.0	0.08	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	1	25.0	0.03	0.05	1584	1584	79
54	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	7		7	60.0	0.42	No work	NO WORK ON THESE FIXTURES	NO WORK	7	60.0	0.42	0.00	3564	3564	0
55	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
56	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
57	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1584	1584	0
58	CONFERENCE ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	8		8	60.0	0.48	No work	NO WORK ON THESE FIXTURES	NO WORK	8	60.0	0.48	0.00	2277	2277	0
59	CONFERENCE ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2277	2277	0
60	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
61	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
62	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	2376	2376	0
63	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1584	1584	0
64	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2376	2376	219
65	CONFERENCE ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	6		6	90.0	0.54	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	6	44.0	0.26	0.27	2277	2277	628

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
66	OFFICE	2L 4FT T8 ELE FIXT	R2LR	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.03	2376	2376	76
67	CONFERENCE ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	5		5	60.0	0.30	No work	NO WORK ON THESE FIXTURES	NO WORK	5	60.0	0.30	0.00	2277	2277	0
68	CONFERENCE ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	7		7	60.0	0.42	No work	NO WORK ON THESE FIXTURES	NO WORK	7	60.0	0.42	0.00	2277	2277	0
69	RESTROOM	CF 2L 26W	NW	26W CF/HW-2	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
70	RESTROOM	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
71	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
72	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
73	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2376	2376	0
74	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1584	1584	0
75	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3564	3564	0
76	HALLWAY	2L T8U 2X2 FIXT	R22LRBB	2-U-L T8/ELE	9		9	62.0	0.56	Retrofit	Retrofit existing fixture with 2 t8 2' lamps, 2lamp ballast, reflector, and battery back up ballast	2LF17 T8/ELE/REFL (SPEC COMBO LOW)	9	22.0	0.20	0.35	3564	3564	1,283
77	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
78	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	8		8	90.0	0.72	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	8	44.0	0.35	0.36	2376	2376	874
79	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2376	2376	0
80	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	2376	2376	0
81	OFFICE	2L 4FT T8 ELE FIXT	R2LR	2L4' T8/ELE	4		4	60.0	0.24	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.06	2376	2376	152
82	OFFICE	1L 4FT T8 ELE FIXT	R2LR	1L4' T8/ELE	2		2	30.0	0.06	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	-0.03	2376	2376	-67
83	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2376	2376	437
84	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2376	2376	437
85	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2376	2376	437
86	OFFICE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	2376	2376	0
87	OFFICE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	2376	2376	0
88	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2376	2376	437

ECM #3 Lighting As-Built Savings Detail

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Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
89	OFFICE	3L 4FT T8 ELE FIXT	NW	3L4' T8/ELE	1		1	90.0	0.09	No work	NO WORK ON THESE FIXTURES	NO WORK	1	90.0	0.09	0.00	2376	2376	0
89	OFFICE	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	2376	2376	0
90	OFFICE	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	6		6	90.0	0.54	Retrofit	Retrofit existing fixture with 2 T8 lamps, low ballast, reflector and new sockets and battery back up ballast	2L4' T8/ELE (STD LOW)	6	44.0	0.26	0.27	2376	2376	656
91	OFFICE	INC 67W-80W	NW	INCANDESCENT	3		3	75.0	0.23	No work	NO WORK ON THESE FIXTURES	NO WORK	3	75.0	0.23	0.00	2376	2376	0
92	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2376	2376	0
93	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2376	2376	0
94	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2376	2376	0
95	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2376	2376	0
96	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2376	2376	437
97	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1584	1584	0
98	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2376	2376	437
99	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1584	1584	0
100	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2376	2376	0
101	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	2376	2376	0
102	OFFICE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	2376	2376	0
103	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2376	2376	219
104	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	16		16	60.0	0.96	No work	NO WORK ON THESE FIXTURES	NO WORK	16	60.0	0.96	0.00	3564	3564	0
105	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	4		4	62.0	0.25	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	4	29.0	0.12	0.13	3564	3564	470
106	24	EXIT-LED	NW	EXIT LED	3		3	1.8	0.01	No work	NO WORK ON THESE FIXTURES	NO WORK	3	1.8	0.01	0.00	8672	8672	0
107	HALLWAY	1L 4FT T12 ES/MAG FIXT	R1L	1L4' EE/ELE	3		3	34.0	0.10	Retrofit	B/L-s RETROFIT- use 1- 1Lamp t8 LOW ballast, 1 t8 lamps, and new sockets.	1L4' T8/ELE (STD LOW)	3	22.0	0.07	0.04	3564	3564	128
108	HALLWAY	INC 90W-110W	NCTR32W	INCANDESCENT	4		4	100.0	0.40	New	CPFL18WTRACK- Install new track units as specified - 1Lamp 18w compact fluorescent.	18W CF/HW	4	20.0	0.08	0.31	3564	3564	1,140
109	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
110	CLASSROOM	4L 4FT T8 ELE FIXT	R3LR	4L4' T8/ELE	16		16	120.0	1.92	Retrofit	retrofit with 1 - 3 lamp t8 LOW ballast, 3 t8 lamps, reflectors, and new sockets.	3L4' T8/ELE (STD LOW)	16	65.0	1.04	0.86	2178	2178	1,917

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
111	EQUIPMENT ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1089	1089	0
112	AUDITORIUM	300W INC W/ HOOD	CFSIH100	INCANDESCENT	16		16	300.0	4.80	Retrofit	Install new 100w compact fluorescent lamp	CFSI 100W	16	100.0	1.60	3.14	1485	1485	4,752
113	AUDITORIUM	INC 67W-80W	NW	INCANDESCENT	26		26	75.0	1.95	No work	NO WORK ON THESE FIXTURES	NO WORK	26	75.0	1.95	0.00	1485	1485	0
114	EQUIPMENT ROOM	INC 67W-80W	NW	INCANDESCENT	19		19	75.0	1.43	No work	NO WORK ON THESE FIXTURES	NO WORK	19	75.0	1.43	0.00	1089	1089	0
115	24	EXIT-LED	NW	EXIT LED	4		4	1.8	0.01	No work	NO WORK ON THESE FIXTURES	NO WORK	4	1.8	0.01	0.00	8672	8672	0
116	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1584	1584	0
117	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1584	1584	0
118	CAFETERIA	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	44		44	60.0	2.64	No work	NO WORK ON THESE FIXTURES	NO WORK	44	60.0	2.64	0.00	1980	1980	0
119	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
120	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	7		7	60.0	0.42	No work	NO WORK ON THESE FIXTURES	NO WORK	7	60.0	0.42	0.00	3564	3564	0
121	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
122	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1584	1584	0
123	RESTROOM	INC 67W-80W	CFSIS25	INCANDESCENT	1		1	75.0	0.08	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	1	25.0	0.03	0.05	3564	3564	178
124	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3564	3564	0
125	RESTROOM	INC 67W-80W	CFSIS25	INCANDESCENT	1		1	75.0	0.08	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	1	25.0	0.03	0.05	3564	3564	178
126	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3564	3564	0
127	RESTROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	3564	3564	328
128	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	8		8	60.0	0.48	No work	NO WORK ON THESE FIXTURES	NO WORK	8	60.0	0.48	0.00	1584	1584	0
129	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2376	2376	219
130	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3564	3564	0
131	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3564	3564	0
132	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
133	STORAGE	INC 67W-80W	CFSIS25	INCANDESCENT	2		2	75.0	0.15	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	2	25.0	0.05	0.10	1584	1584	158

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
134	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	6		6	60.0	0.36	No work	NO WORK ON THESE FIXTURES	NO WORK	6	60.0	0.36	0.00	1584	1584	0
135	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	2178	2178	0
136	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1584	1584	0
135	EQUIPMENT ROOM	INC 67W-80W	CFSIS25	INCANDESCENT	4		4	75.0	0.30	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	4	25.0	0.10	0.20	1089	1089	218
135	OFFICE	2L 4FT T8 ELE FIXT	R22LR	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	2376	2376	147
136	RESTROOM	2L T8U 2X2 FIXT	NW	2-U-L T8/ELE	1		1	62.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	62.0	0.06	0.00	3564	3564	0
137	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	14		14	60.0	0.84	No work	NO WORK ON THESE FIXTURES	NO WORK	14	60.0	0.84	0.00	2178	2178	0
138	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	12		16	62.0	0.74	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	16	29.0	0.46	0.27	2178	2178	610
139	RESTROOM	1L 4FT T8 ELE FIXT	NN14L	1L4' T8/ELE	1		1	30.0	0.03	New	N4WL- Replace existing fixture with new 1x4 LOW ballast wrap- surface mount. 1L t8/ELE LOW /REFL.-NN14L	1L4' T8/ELE (STD LOW)	1	22.0	0.02	0.01	3564	3564	29
140	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
141	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	20		20	90.0	1.80	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	20	44.0	0.88	0.90	2376	2376	2,186
141	OFFICE	F17T8/2'/2L	NW	1L2' T8/ELE	2		2	17.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	2	17.0	0.03	0.00	2376	2376	0
142	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	2376	2376	0
143	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1584	1584	0
144	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1584	1584	0
145	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	12		12	60.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	12	60.0	0.72	0.00	2178	2178	0
146	CLASSROOM	INC 40W-60W	NW	INCANDESCENT	9		9	40.0	0.36	No work	NO WORK ON THESE FIXTURES	NO WORK	9	40.0	0.36	0.00	2178	2178	0
147	CLASSROOM	INC 40W-60W	NW	INCANDESCENT	8		8	40.0	0.32	No work	NO WORK ON THESE FIXTURES	NO WORK	8	40.0	0.32	0.00	2178	2178	0
148	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3564	3564	0
149	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
150	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	9		9	62.0	0.56	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	9	29.0	0.26	0.29	3564	3564	1,059
150	OFFICE	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	2376	2376	0
151	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	5		5	90.0	0.45	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	5	44.0	0.22	0.23	2376	2376	546

ECM #3 Lighting As-Built Savings Detail

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Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
152	OFFICE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2376	2376	78
153	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	20		19	90.0	1.80	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	19	44.0	0.84	0.94	2376	2376	2,290
154	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
155	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2376	2376	219
156	CONFERENCE ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2277	2277	419
157	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	18		18	90.0	1.62	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	18	44.0	0.79	0.81	2178	2178	1,803
158	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	3		3	62.0	0.19	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	3	29.0	0.09	0.10	2178	2178	216
159	CLASSROOM	1L 4FT T8 ELE FIXT	NW	1L4' T8/ELE	4		4	30.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	4	30.0	0.12	0.00	2178	2178	0
160	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
161	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1584	1584	0
162	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	10		10	90.0	0.90	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	10	44.0	0.44	0.45	2178	2178	1,002
163	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2178	2178	72
164	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	11		11	60.0	0.66	No work	NO WORK ON THESE FIXTURES	NO WORK	11	60.0	0.66	0.00	1584	1584	0
165	EQUIPMENT ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	1089	1089	0
166	EQUIPMENT ROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	6		6	120.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	6	120.0	0.72	0.00	1089	1089	0
167	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2178	2178	200
168	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	16		16	90.0	1.44	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	16	44.0	0.70	0.72	2178	2178	1,603
169	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	2178	2178	144
170	CLASSROOM	F17T8/2'/2L	R2LR	1L2' T8/ELE	2		2	17.0	0.03	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	-0.05	2178	2178	-118
171	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
172	RESTROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	3564	3564	328
173	STORAGE	CF23/1	NW	22W CF/HW	2		2	24.0	0.05	No work	NO WORK ON THESE FIXTURES	NO WORK	2	24.0	0.05	0.00	1584	1584	0
174	CAFETERIA	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	6		6	120.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	6	120.0	0.72	0.00	1980	1980	0

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
175	CAFETERIA	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1980	1980	0
176	CAFETERIA	2L 4FT T12 ES/MAG FIXT	R2L	2L4' EE/ELE	1		1	60.0	0.06	Retrofit	B/L-s RETROFIT- use 1- 2 Lamp t8 LOW ballast, 2 t8 lamps, and new sockets.	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.02	1980	1980	32
177	RESTROOM	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
178	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
179	RESTROOM	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
179	CAFETERIA	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	2		2	120.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	2	120.0	0.24	0.00	1980	1980	0
180	CAFETERIA	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	7		7	90.0	0.63	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	7	44.0	0.31	0.32	1980	1980	638
180	OFFICE	Non Energy Item	NW	NO ENERGY USE ECM	0		0	0.0	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	0	0.0	0.00	0.00	2376	2376	0
181	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2376	2376	437
182	OFFICE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2376	2376	78
183	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2376	2376	437
184	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	4		4	62.0	0.25	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	4	29.0	0.12	0.13	3564	3564	470
185	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	19		19	90.0	1.71	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	19	44.0	0.84	0.86	2178	2178	1,904
186	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
187	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1584	1584	0
188	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1584	1584	0
189	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1584	1584	0
190	STORAGE	2L 4FT T8 ELE FIXT	R2LR	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.03	1584	1584	51
191	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
190	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1584	1584	0
191	STORAGE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	6	29.0	0.17	0.19	1584	1584	314
192	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	5		5	62.0	0.31	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	5	29.0	0.15	0.16	3564	3564	588
193	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	14		14	90.0	1.26	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	14	44.0	0.62	0.63	2178	2178	1,403

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
194	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	8		8	62.0	0.50	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	8	29.0	0.23	0.26	3564	3564	941
195	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
196	STORAGE	INC 67W-80W	CFSIS25	INCANDESCENT	14		14	75.0	1.05	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	14	25.0	0.35	0.69	1584	1584	1,109
197	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
198	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	1584	1584	0
199	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	6		6	60.0	0.36	No work	NO WORK ON THESE FIXTURES	NO WORK	6	60.0	0.36	0.00	1584	1584	0
200	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	9		9	62.0	0.56	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	9	29.0	0.26	0.29	3564	3564	1,059
201	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
202	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
203	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3564	3564	0
204	RESTROOM	2L 4FT T8 ELE FIXT	R2L	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	B/L-s RETROFIT- use 1- 2 Lamp t8 LOW ballast, 2 t8 lamps, and new sockets.	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.02	3564	3564	57
205	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1584	1584	0
206	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3564	3564	0
207	RESTROOM	2L 4FT T8 ELE FIXT	R2L	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	B/L-s RETROFIT- use 1- 2 Lamp t8 LOW ballast, 2 t8 lamps, and new sockets.	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.02	3564	3564	57
208	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	8		8	90.0	0.72	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	8	44.0	0.35	0.36	2178	2178	802
209	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2178	2178	72
210	CLASSROOM	2' 1L T12 FIXTURE	R21	F20T12/HPF(1)	2		2	32.0	0.06	Retrofit	B/L-2 RETROFIT- use 1- 1 Lamp/2 Lamp t8 ballast, 1 f17 t8 lamp, and new sockets.	1L2' T8/ELE	2	17.0	0.03	0.03	2178	2178	65
211	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
212	CLASSROOM	2' 1L T12 FIXTURE	R21	F20T12/HPF(1)	4		4	32.0	0.13	Retrofit	B/L-2 RETROFIT- use 1- 1 Lamp/2 Lamp t8 ballast, 1 f17 t8 lamp, and new sockets.	1L2' T8/ELE	4	17.0	0.07	0.06	2178	2178	131
213	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
214	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2178	2178	72
215	CLASSROOM	2' 1L T12 FIXTURE	R22	F20T12/HPF(1)	3		3	32.0	0.10	Retrofit	B/L-2 RETROFIT- use 1- 2 Lamp t8 ballast, 2 f17 t8 lamps, and new sockets.	2L2' T8/ELE	3	32.0	0.10	0.00	2178	2178	0
216	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
217	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2178	2178	72
218	CLASSROOM	2' 1L T12 FIXTURE	R22	F20T12/HPF(1)	3		3	32.0	0.10	Retrofit	B/L-2 RETROFIT- use 1- 2 Lamp t8 ballast, 2 f17 t8 lamps, and new sockets.	2L2' T8/ELE	3	32.0	0.10	0.00	2178	2178	0
219	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	3		3	62.0	0.19	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	3	29.0	0.09	0.10	3564	3564	353
220	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
221	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	9		9	62.0	0.56	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	9	29.0	0.26	0.29	3564	3564	1,059
222	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	3564	3564	118
223	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
224	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
225	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	8		8	60.0	0.48	No work	NO WORK ON THESE FIXTURES	NO WORK	8	60.0	0.48	0.00	2376	2376	0
225	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	16		16	90.0	1.44	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	16	44.0	0.70	0.72	2178	2178	1,603
226	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	2178	2178	0
227	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	16		16	90.0	1.44	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	16	44.0	0.70	0.72	2178	2178	1,603
228	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
229	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	3		3	90.0	0.27	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	3	44.0	0.13	0.14	2376	2376	328
230	EQUIPMENT ROOM	2L 4FT T8 ELE FIXT	R1LR	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	B/L/s-R RETROFIT- use 1 1 Lamp t8 LOW ballast, custom silver reflector, 1 t8 lamps and new sockets to retrofit the existing fixture.	1L4' T8/ELE (STD LOW)	1	22.0	0.02	0.04	1089	1089	41
231	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2376	2376	219
232	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2376	2376	437
233	OFFICE	4L 4FT T8 ELE FIXT	R3LR	4L4' T8/ELE	2		2	120.0	0.24	Retrofit	retrofit with 1 - 3 lamp t8 LOW ballast, 3 t8 lamps, reflectors, and new sockets.	3L4' T8/ELE (STD LOW)	2	65.0	0.13	0.11	2376	2376	261
234	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	24		24	60.0	1.44	No work	NO WORK ON THESE FIXTURES	NO WORK	24	60.0	1.44	0.00	2178	2178	0
235	CLASSROOM	3L 4FT T8 ELE FIXT	NW	3L4' T8/ELE	24		24	90.0	2.16	No work	NO WORK ON THESE FIXTURES	NO WORK	24	90.0	2.16	0.00	2178	2178	0
236	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
237	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	16		15	90.0	1.44	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	15	44.0	0.66	0.76	2178	2178	1,699
238	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3564	3564	0

ECM #3 Lighting As-Built Savings Detail

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Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
239	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
240	HALLWAY	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit existing fixture with 2 T8 lamps, low ballast, reflector and new sockets and battery back up ballast	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	3564	3564	164
241	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	16		16	60.0	0.96	No work	NO WORK ON THESE FIXTURES	NO WORK	16	60.0	0.96	0.00	2178	2178	0
242	CLASSROOM	CF32/1	NW	32W CF/HW	1		1	34.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	34.0	0.03	0.00	2178	2178	0
243	HALLWAY	2L T8U 2X2 FIXT	R22LRBB	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	Retrofit existing fixture with 2 t8 2' lamps, 2lamp ballast, reflector, and battery back up ballast	2LF17 T8/ELE/REFL (SPEC COMBO LOW)	6	22.0	0.13	0.24	3564	3564	855
244	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	3564	3564	118
245	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3564	3564	0
245	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
246	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
247	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2376	2376	0
248	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
249	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	12		12	60.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	12	60.0	0.72	0.00	2376	2376	0
250	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	13		13	60.0	0.78	No work	NO WORK ON THESE FIXTURES	NO WORK	13	60.0	0.78	0.00	2178	2178	0
251	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2178	2178	0
252	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	2376	2376	0
253	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
254	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	12		12	60.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	12	60.0	0.72	0.00	2178	2178	0
255	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
256	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	3564	3564	235
257	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
258	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1584	1584	0
259	STORAGE	1L 4FT T8 ELE FIXT	NW	1L4' T8/ELE	2		2	30.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	2	30.0	0.06	0.00	1584	1584	0
260	LIBRARY	CF13/2	NW	13W CF/HW-2	9		9	31.0	0.28	No work	NO WORK ON THESE FIXTURES	NO WORK	9	31.0	0.28	0.00	2475	2475	0

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Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
261	LIBRARY	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	73		73	90.0	6.57	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	73	44.0	3.21	3.29	2475	2475	8,311
262	LIBRARY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2475	2475	82
263	24	EXIT-LED	NW	EXIT LED	3		3	1.8	0.01	No work	NO WORK ON THESE FIXTURES	NO WORK	3	1.8	0.01	0.00	8672	8672	0
264	STORAGE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	6		6	90.0	0.54	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	6	44.0	0.26	0.27	1584	1584	437
265	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2376	2376	219
266	STORAGE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	1584	1584	146
267	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
268	HALLWAY	2L 4FT T8 ELE FIXT	R2LR	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.02	3564	3564	57
269	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2178	2178	0
270	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2178	2178	0
271	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	8		8	60.0	0.48	No work	NO WORK ON THESE FIXTURES	NO WORK	8	60.0	0.48	0.00	2178	2178	0
272	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	10		10	60.0	0.60	No work	NO WORK ON THESE FIXTURES	NO WORK	10	60.0	0.60	0.00	2178	2178	0
273	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
274	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	7		7	60.0	0.42	No work	NO WORK ON THESE FIXTURES	NO WORK	7	60.0	0.42	0.00	3564	3564	0
275	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1584	1584	0
276	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	7		7	60.0	0.42	No work	NO WORK ON THESE FIXTURES	NO WORK	7	60.0	0.42	0.00	3564	3564	0
277	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	8		8	60.0	0.48	No work	NO WORK ON THESE FIXTURES	NO WORK	8	60.0	0.48	0.00	3564	3564	0
278	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
279	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	8		8	60.0	0.48	No work	NO WORK ON THESE FIXTURES	NO WORK	8	60.0	0.48	0.00	3564	3564	0
279	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
280	24	1L 3' T8 FIXT	NW	1L3' T8/ELE	4		4	29.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	4	29.0	0.12	0.00	8672	8672	0
281	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	24		24	60.0	1.44	No work	NO WORK ON THESE FIXTURES	NO WORK	24	60.0	1.44	0.00	2178	2178	0
282	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	4		4	62.0	0.25	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	4	29.0	0.12	0.13	3564	3564	470

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Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

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	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
283	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	4		4	62.0	0.25	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	4	29.0	0.12	0.13	3564	3564	470
284	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
285	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
286	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	18		18	60.0	1.08	No work	NO WORK ON THESE FIXTURES	NO WORK	18	60.0	1.08	0.00	2178	2178	0
287	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2178	2178	0
288	CLASSROOM	CFL FIXT 2D LAMP	N2X22R	16W CF/SI	1		1	18.0	0.02	New	N2X2- Replace the existing fixture with a new 2x2 (2L f17/Refl) drop in fixture.	2L2' T8/ELE/REFL	1	32.0	0.03	-0.01	2178	2178	-30
289	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	2		2	18.0	0.04	No work	NO WORK ON THESE FIXTURES	NO WORK	2	18.0	0.04	0.00	1584	1584	0
290	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	12		12	60.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	12	60.0	0.72	0.00	2178	2178	0
291	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	30		30	60.0	1.80	No work	NO WORK ON THESE FIXTURES	NO WORK	30	60.0	1.80	0.00	2178	2178	0
292	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	24		24	60.0	1.44	No work	NO WORK ON THESE FIXTURES	NO WORK	24	60.0	1.44	0.00	2178	2178	0
293	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2376	2376	219
294	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2376	2376	0
295	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	10		10	62.0	0.62	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	10	29.0	0.29	0.32	3564	3564	1,176
296	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
297	CLASSROOM	4L 4FT T8 ELE FIXT	R1X43LR	4L4' T8/ELE	16		16	120.0	1.92	Retrofit	Retrofit existing 1x4 with refl, 3L T8, and LOW ballast	3L4' T8/ELE	16	65.0	1.04	0.86	2178	2178	1,917
298	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2178	2178	0
298	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2178	2178	0
298	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2178	2178	0
299	CLASSROOM	4L 4FT T8 ELE FIXT	R1X43LR	4L4' T8/ELE	4		4	120.0	0.48	Retrofit	Retrofit existing 1x4 with refl, 3L T8, and LOW ballast	3L4' T8/ELE	4	65.0	0.26	0.22	2178	2178	479
300	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1584	1584	0
301	CLASSROOM	4L 4FT T8 ELE FIXT	R1X43LR	4L4' T8/ELE	21		21	120.0	2.52	Retrofit	Retrofit existing 1x4 with refl, 3L T8, and LOW ballast	3L4' T8/ELE	21	65.0	1.37	1.13	2178	2178	2,516
302	CLASSROOM	INC 67W-80W	NW	INCANDESCENT	7		7	75.0	0.53	No work	NO WORK ON THESE FIXTURES	NO WORK	7	75.0	0.53	0.00	2178	2178	0
303	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1584	1584	0

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
304	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
305	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	6	29.0	0.17	0.19	3564	3564	706
306	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
307	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	9		9	60.0	0.54	No work	NO WORK ON THESE FIXTURES	NO WORK	9	60.0	0.54	0.00	3564	3564	0
308	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
309	CLASSROOM	CF-13W	RC18H	13W CF/HW-1	2		2	15.0	0.03	New/Retrofit	Retrofit existing incandescent recessed high hat with new reflector, ballast whip and lamp. ELE ballast.	18W CF/HW	2	20.0	0.04	-0.01	2178	2178	-22
310	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	29		29	90.0	2.61	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	29	44.0	1.28	1.31	2178	2178	2,905
311	STORAGE	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	1		1	120.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	1	120.0	0.12	0.00	1584	1584	0
312	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1584	1584	0
313	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	20		20	90.0	1.80	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	20	44.0	0.88	0.90	2178	2178	2,004
314	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
315	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	16		16	90.0	1.44	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	16	44.0	0.70	0.72	2178	2178	1,603
316	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2178	2178	0
317	CLASSROOM	INC 67W-80W	RC18H	INCANDESCENT	1		1	75.0	0.08	New/Retrofit	Retrofit existing incandescent recessed high hat with new reflector, ballast whip and lamp. ELE ballast.	18W CF/HW	1	20.0	0.02	0.05	2178	2178	120
316	EQUIPMENT ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1089	1089	0
317	CLASSROOM	2L 4FT T8 ELE FIXT	R2LR	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.03	2178	2178	70
318	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3564	3564	0
319	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
320	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1584	1584	0
321	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3564	3564	0
322	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
323	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	21		21	90.0	1.89	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	21	44.0	0.92	0.95	2178	2178	2,104
324	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2178	2178	72

ECM #3 Lighting As-Built Savings Detail

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Hartford School District - Hartford High School and HACTC

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Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
325	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1584	1584	0
326	STORAGE	3L 4FT T8 ELE FIXT	NW	3L4' T8/ELE	2		1	90.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	2	90.0	0.18	0.00	1584	1584	0
327	STORAGE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		1	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	1584	1584	105
328	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	8		8	60.0	0.48	No work	NO WORK ON THESE FIXTURES	NO WORK	8	60.0	0.48	0.00	3564	3564	0
329	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
330	24	EXIT-LED	NW	EXIT LED	4		4	1.8	0.01	No work	NO WORK ON THESE FIXTURES	NO WORK	4	1.8	0.01	0.00	8672	8672	0
331	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	18		18	62.0	1.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	18	29.0	0.52	0.58	3564	3564	2,117
332	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
333	CONFERENCE ROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	2277	2277	150
334	CONFERENCE ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	2277	2277	0
335	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
336	CONFERENCE ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	6		6	90.0	0.54	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	6	44.0	0.26	0.27	2277	2277	628
337	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
338	CONFERENCE ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	5		5	90.0	0.45	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	5	44.0	0.22	0.23	2277	2277	524
339	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
340	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
341	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
342	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	16		16	90.0	1.44	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	16	44.0	0.70	0.72	2178	2178	1,603
343	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	15		15	90.0	1.35	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	15	44.0	0.66	0.68	2178	2178	1,503
344	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2376	2376	219
345	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	8		8	62.0	0.50	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	8	29.0	0.23	0.26	3564	3564	941
346	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
347	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	18		18	62.0	1.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	18	29.0	0.52	0.58	3564	3564	2,117

ECM #3 Lighting As-Built Savings Detail

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Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

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Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
348	24	EXIT-LED	NW	EXIT LED	4		4	1.8	0.01	No work	NO WORK ON THESE FIXTURES	NO WORK	4	1.8	0.01	0.00	8672	8672	0
349	EQUIPMENT ROOM	INC 67W-80W	NW	INCANDESCENT	5		5	75.0	0.38	No work	NO WORK ON THESE FIXTURES	NO WORK	5	75.0	0.38	0.00	1089	1089	0
349	HALLWAY	INC MR16 50W/ MR16 TR	LED	LV/HALOGEN/FIXT	23		23	60.0	1.38	Retrofit	Install new LED retro kit - replace existing lamps per instructions.	LED KIT1	23	5.0	0.12	1.24	3564	3564	4,508
350	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	6	29.0	0.17	0.19	3564	3564	706
351	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3564	3564	0
352	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
353	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	3		3	62.0	0.19	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	3	29.0	0.09	0.10	3564	3564	353
354	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2376	2376	0
355	OFFICE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	2376	2376	157
356	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2376	2376	437
357	OFFICE	INC 40W-60W	CFSIS15	INCANDESCENT	1		1	40.0	0.04	Retrofit	Install new 15w CFSI spiral lamp	15w CFSI spiral	1	15.0	0.02	0.02	2376	2376	59
358	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3564	3564	0
359	RESTROOM	F17T8/2'/2L	NW	1L2' T8/ELE	1		1	17.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	17.0	0.02	0.00	3564	3564	0
360	OFFICE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	6	29.0	0.17	0.19	2376	2376	470
361	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	6		6	60.0	0.36	No work	NO WORK ON THESE FIXTURES	NO WORK	6	60.0	0.36	0.00	2376	2376	0
362	OFFICE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	5		5	62.0	0.31	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	5	29.0	0.15	0.16	2376	2376	392
363	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	73		73	60.0	4.38	No work	NO WORK ON THESE FIXTURES	NO WORK	73	60.0	4.38	0.00	2178	2178	0
364	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	9		9	60.0	0.54	No work	NO WORK ON THESE FIXTURES	NO WORK	9	60.0	0.54	0.00	2178	2178	0
365	24	EXIT-LED	NW	EXIT LED	5		5	1.8	0.01	No work	NO WORK ON THESE FIXTURES	NO WORK	5	1.8	0.01	0.00	8672	8672	0
366	CLASSROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	2		2	120.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	2	120.0	0.24	0.00	2178	2178	0
367	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2178	2178	0
368	STORAGE	1L 4FT T8 ELE FIXT	NW	1L4' T8/ELE	3		3	30.0	0.09	No work	NO WORK ON THESE FIXTURES	NO WORK	3	30.0	0.09	0.00	1584	1584	0
369	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1584	1584	0

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Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

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	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
370	STORAGE	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	12		12	120.0	1.44	No work	NO WORK ON THESE FIXTURES	NO WORK	12	120.0	1.44	0.00	1584	1584	0
371	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
372	STORAGE	INC 130W-160W	CFSIB20	INCANDESCENT	2		2	135.0	0.27	Retrofit	Install new 20w CFSI bulb lamp	20w CFSI bulb	2	20.0	0.04	0.23	1584	1584	364
373	STORAGE	INC 67W-80W	CFSIB20	INCANDESCENT	3		5	75.0	0.23	Retrofit	Install new 20w CFSI bulb lamp	20w CFSI bulb	5	20.0	0.10	0.12	1584	1584	198
374	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	6		6	60.0	0.36	No work	NO WORK ON THESE FIXTURES	NO WORK	6	60.0	0.36	0.00	1584	1584	0
375	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	6		6	90.0	0.54	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	6	44.0	0.26	0.27	2376	2376	656
376	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
377	STORAGE	CFL FIXT 2D LAMP	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1584	1584	0
378	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3564	3564	0
379	RESTROOM	F17T8/2'/2L	NW	1L2' T8/ELE	1		1	17.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	17.0	0.02	0.00	3564	3564	0
380	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3564	3564	0
381	RESTROOM	F17T8/2'/2L	NW	1L2' T8/ELE	2		2	17.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	2	17.0	0.03	0.00	3564	3564	0
382	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	5		5	90.0	0.45	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	5	44.0	0.22	0.23	2376	2376	546
383	OFFICE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2376	2376	78
384	OFFICE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2376	2376	78
385	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	8		8	90.0	0.72	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	8	44.0	0.35	0.36	2376	2376	874
386	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	3		3	90.0	0.27	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	3	44.0	0.13	0.14	2376	2376	328
387	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	27		27	90.0	2.43	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	27	44.0	1.19	1.22	2178	2178	2,705
388	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	3		3	62.0	0.19	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	3	29.0	0.09	0.10	2178	2178	216
389	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
390	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	67		67	60.0	4.02	No work	NO WORK ON THESE FIXTURES	NO WORK	67	60.0	4.02	0.00	2178	2178	0
391	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	2178	2178	0
392	STORAGE	2L 4FT T8 ELE FIXT	R2LR	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.03	1584	1584	51

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
393	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	46		46	60.0	2.76	No work	NO WORK ON THESE FIXTURES	NO WORK	46	60.0	2.76	0.00	2178	2178	0
394	CLASSROOM	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	2178	2178	0
395	CLASSROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	12		12	120.0	1.44	No work	NO WORK ON THESE FIXTURES	NO WORK	12	120.0	1.44	0.00	2178	2178	0
396	CLASSROOM	4L 4FT T8 ELE FIXT	R3LR	4L4' T8/ELE	10		10	120.0	1.20	Retrofit	retrofit with 1 - 3 lamp t8 LOW ballast, 3 t8 lamps, reflectors, and new sockets.	3L4' T8/ELE (STD LOW)	10	65.0	0.65	0.54	2178	2178	1,198
397	CLASSROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	2		2	120.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	2	120.0	0.24	0.00	2178	2178	0
398	CLASSROOM	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	2178	2178	0
399	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	9		9	60.0	0.54	No work	NO WORK ON THESE FIXTURES	NO WORK	9	60.0	0.54	0.00	2178	2178	0
400	CONFERENCE ROOM	4L 4FT T8 ELE FIXT	R3LR	4L4' T8/ELE	10		10	120.0	1.20	Retrofit	retrofit with 1 - 3 lamp t8 LOW ballast, 3 t8 lamps, reflectors, and new sockets.	3L4' T8/ELE (STD LOW)	10	65.0	0.65	0.54	2277	2277	1,252
401	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
402	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	50		50	60.0	3.00	No work	NO WORK ON THESE FIXTURES	NO WORK	50	60.0	3.00	0.00	2178	2178	0
402	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
403	24	INC 67W-80W	NW	INCANDESCENT	2		2	75.0	0.15	No work	NO WORK ON THESE FIXTURES	NO WORK	2	75.0	0.15	0.00	8672	8672	0
404	STORAGE	Non Energy Item	NW	NO ENERGY USE ECM	0		0	0.0	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	0	0.0	0.00	0.00	1584	1584	0
405	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1584	1584	0
406	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	8		8	90.0	0.72	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	8	44.0	0.35	0.36	2178	2178	802
407	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	9		9	90.0	0.81	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	9	44.0	0.40	0.41	2178	2178	902
408	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	9		9	90.0	0.81	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	9	44.0	0.40	0.41	2178	2178	902
409	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	8		8	60.0	0.48	No work	NO WORK ON THESE FIXTURES	NO WORK	8	60.0	0.48	0.00	1584	1584	0
410	STORAGE	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	1		1	120.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	1	120.0	0.12	0.00	1584	1584	0
411	STORAGE	2L 2' T12 FIXTURE	N14S	F20T12/HPF(2)	2		2	56.0	0.11	New	N14S - Install new 4' 1L T8 strip	1L4' T8/ELE	2	22.0	0.04	0.07	1584	1584	108
412	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2178	2178	0
413	CLASSROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	12		12	120.0	1.44	No work	NO WORK ON THESE FIXTURES	NO WORK	12	120.0	1.44	0.00	2178	2178	0
414	CLASSROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	12		12	120.0	1.44	No work	NO WORK ON THESE FIXTURES	NO WORK	12	120.0	1.44	0.00	2178	2178	0

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
415	CLASSROOM	2L 4FT T8 ELE FIXT	R4R	2L4' T8/ELE	3		3	60.0	0.18	Retrofit	B/L/R RETROFIT- use 1- 4 Lamp t8 ballast, 4 t8 lamps, reflector, and new sockets.	4L4' T8/ELE (STD LOW)	3	87.0	0.26	-0.08	2178	2178	-176
416	STORAGE	2L 2' T12 FIXTURE	NN14I	F20T12/HPF(2)	2		1	56.0	0.11	New	N4WL- Replace existing fixture with new 1x4 LOW ballast wrap- surface mount. 1L t8/ELE LOW /REFL.-NN14L	1L4' T8/ELE (STD LOW)	1	22.0	0.02	0.09	1584	1584	143
417	CLASSROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	18		18	120.0	2.16	No work	NO WORK ON THESE FIXTURES	NO WORK	18	120.0	2.16	0.00	2178	2178	0
418	CLASSROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	2		2	120.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	2	120.0	0.24	0.00	2178	2178	0
419	CLASSROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	3		3	120.0	0.36	No work	NO WORK ON THESE FIXTURES	NO WORK	3	120.0	0.36	0.00	2178	2178	0
420	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1584	1584	0
421	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	8		8	62.0	0.50	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	8	29.0	0.23	0.26	2178	2178	575
422	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	2178	2178	0
423	24	VENDMISER	VM	Vending Miser - soda-before avg.	3		3	280.0	0.84	New-S	Install venmis in vending machines	INSTALL SENSOR SPECIFIED	3	280.0	0.84	0.00	8672	4336	3,642
424	Office	ISOLE	ISOLE	INSTALL SENSOR SPECIFIED	0		0	250.0	0.00	New-S	Install Isole unit to control office equipment.	INSTALL SENSOR SPECIFIED	0	250.0	0.00	0.00	2376	1426	0
426	A	INSTALL OCCUPANCY SENSORS - WALL SWITCH			27	na	27		na	Install Sensor	Install Sensor - ws	Install Sensor - various load types	27	120.0	3.24	0.32	2469	1481	3,200
427	A	INSTALL OCCUPANCY SENSORS - WALL SWITCH			0	na	0		na	Install Sensor	Install Sensor - wws	Install Sensor - various load types	0	150.0	0.00	0.00	2469	1728	0
428	A	INSTALL OCCUPANCY SENSORS - WALL SWITCH			0	na	0		na	Install Sensor	Install Sensor - wws	Install Sensor - various load types	0	150.0	0.00	0.00	2469	1728	0
429	A	INSTALL OCCUPANCY SENSORS			156	na	156		na	Install Sensor	Install Sensor - ci-100	Install Sensor - various load types	156	500.0	78.00	7.80	2469	1679	61,630
430	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - integrated	Install Sensor - various load types	0	140.0	0.00	0.00	2469	1975	0
431	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - Internal sensor	Install Sensor - various load types	0	140.0	0.00	0.00	2469	1975	0
432	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - Internal sensor	Install Sensor - various load types	0	140.0	0.00	0.00	2469	1975	0
433	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - Integrated. bilevel ball..	Install Sensor - various load types	0	140.0	0.00	0.00	2469	1975	0
434	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - Integrated. bilevel ball..	Install Sensor - various load types	0	140.0	0.00	0.00	2469	1975	0
435	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - Internal	Install Sensor - various load types	0	140.0	0.00	0.00	2469	1975	0
436	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - No change	Install Sensor - various load types	0	0.0	0.00	0.00	2469	2469	0
437	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - OS-1	Install Sensor - various load types	0	140.0	0.00	0.00	2469	1605	0

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford High School and HACTC

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
438	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - OS-2	Install Sensor - various load types	0	140.0	0.00	0.00	2469	1605	0
439	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - OS-3	Install Sensor - various load types	0	260.0	0.00	0.00	2469	1481	0
440	A	INSTALL OCCUPANCY SENSORS			2	na	2		na	Install Sensor	Install Sensor - Photocell	Install Sensor - various load types	2	140.0	0.28	0.03	2469	1605	242
441	A	INSTALL OCCUPANCY SENSORS			0	na	0	150	na	Install Sensor	Install Sensor - Photocell dimming	Install Sensor - various load types	0	200.0	0.00	0.00	2469	1975	0
442	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - Photocell dimming	Install Sensor - various load types	0	200.0	0.00	0.00	2469	1975	0
443	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - ts	Install Sensor - various load types	0	320.0	0.00	0.00	2469	1605	0
444	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - ts	Install Sensor - various load types	0	320.0	0.00	0.00	2469	1605	0
445	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - TS200	Install Sensor - various load types	0	320.0	0.00	0.00	2469	1605	0
446	A	INSTALL OCCUPANCY SENSORS			0	na	0		na	Install Sensor	Install Sensor - TS200	Install Sensor - various load types	0	320.0	0.00	0.00	2469	1605	0
447	A	INSTALL OCCUPANCY SENSORS			8	na	8		na	Install Sensor	Install Sensor - US2000h	Install Sensor - various load types	8	540.0	4.32	0.43	2469	1481	4,267
448	M	MISC. ECMS- (UNDISCOVERED)		Misc	1	0	1	0	0.00	New/Retrofit	Misc Retrofit and New Fixtures	MISC. ECMS- (UNDISCOVERED)	1	0	0.00	0.00	3086	3086	0
449		LAMP DISPOSAL - feet			22846	100%	22,847	0			LAMP DISPOSAL - feet		22,846						
450		PCB BALLAST DISPOSAL(lbs-est.)			5242	10%	524	0			PCB BALLAST DISPOSAL(lbs-est.)		524						
452																			
							(KW INCLUDES DIVERSITY FACTOR)						(KW DOES NOT INCLUDE SENSOR LOAD)						
				TOTALS	30,941	2			203.569				26,228		144.959	58.610			212,902

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford Memorial Middle School

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
1	OFFICE	CF 26W	NW	26W CF/HW	12		12	28.0	0.34	No work	NO WORK ON THESE FIXTURES	NO WORK	12	28.0	0.34	0.00	1980	1980	0
2	OFFICE	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	4	44.0	0.18	0.18	1980	1980	364
3	OFFICE	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1980	1980	0
4	OFFICE	1L 4FT T8 ELE FIXT	NW	1L4' T8/ELE	3		3	30.0	0.09	No work	NO WORK ON THESE FIXTURES	NO WORK	3	30.0	0.09	0.00	1980	1980	0
5	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	1980	1980	182
6	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	1980	1980	182
7	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	1980	1980	182
8	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	1980	1980	364
9	STORAGE	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1485	1485	0
10	HALLWAY	CF 26W	NW	26W CF/HW	13		13	28.0	0.36	No work	NO WORK ON THESE FIXTURES	NO WORK	13	28.0	0.36	0.00	3762	3762	0
11	HALLWAY	2L 2X2 BIAX LAMP	NW	2L FT40 BIAX	24		24	50.0	1.20	No work	NO WORK ON THESE FIXTURES	NO WORK	24	50.0	1.20	0.00	3762	3762	0
12	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
13	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	12		12	60.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	12	60.0	0.72	0.00	3762	3762	0
14	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
15	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3762	3762	0
16	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
17	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	5		5	60.0	0.30	No work	NO WORK ON THESE FIXTURES	NO WORK	5	60.0	0.30	0.00	3762	3762	0
18	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
19	HALLWAY	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	2		4	90.0	0.18	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	4	44.0	0.18	0.00	3762	3762	15
20	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	1980	1980	364
21	RESTROOM	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
22	CONFERENCE ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	1980	1980	182
23	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	1980	1980	91

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford Memorial Middle School

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
24	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	1980	1980	91
25	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3762	3762	0
26	HALLWAY	3' 1L T12	R2L	1L3' STD/STD	2		2	46.0	0.09	Retrofit	B/L-s RETROFIT- use 1- 2 Lamp t8 LOW ballast, 2 t8 lamps, and new sockets.	2L4' T8/ELE (SPEC COMBO LOW)	2	47.0	0.09	0.00	3762	3762	-8
27	HALLWAY	1L 3' T8 FIXT	R2L	1L3' T8/ELE	1		1	29.0	0.03	Retrofit	B/L-s RETROFIT- use 1- 2 Lamp t8 LOW ballast, 2 t8 lamps, and new sockets.	2L4' T8/ELE (SPEC COMBO LOW)	1	47.0	0.05	-0.02	3762	3762	-68
28	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	3762	3762	248
29	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	10		10	60.0	0.60	No work	NO WORK ON THESE FIXTURES	NO WORK	10	60.0	0.60	0.00	3762	3762	0
30	HALLWAY	EXIT-LED	NW	EXIT LED	4		4	1.8	0.01	No work	NO WORK ON THESE FIXTURES	NO WORK	4	1.8	0.01	0.00	3762	3762	0
31	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3564	3564	0
32	STORAGE	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1485	1485	0
33	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3564	3564	0
34	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
35	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3762	3762	0
36	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3762	3762	0
37	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	10		10	60.0	0.60	No work	NO WORK ON THESE FIXTURES	NO WORK	10	60.0	0.60	0.00	3762	3762	0
38	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
39	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3762	3762	0
40	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3762	3762	0
41	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
42	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3564	3564	0
43	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3564	3564	0
44	STORAGE	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1485	1485	0
45	STORAGE	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1485	1485	0
46	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1485	1485	0

ECM #3 Lighting As-Built Savings Detail

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford Memorial Middle School

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
47	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3564	3564	0
48	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3564	3564	0
49	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	17		17	60.0	1.02	No work	NO WORK ON THESE FIXTURES	NO WORK	17	60.0	1.02	0.00	3762	3762	0
50	24	EXIT-LED	NW	EXIT LED	3		3	1.8	0.01	No work	NO WORK ON THESE FIXTURES	NO WORK	3	1.8	0.01	0.00	8672	8672	0
51	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3762	3762	0
52	HALLWAY	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	3762	3762	346
53	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3762	3762	0
54	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3762	3762	0
55	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
56	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1485	1485	0
57	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
58	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1980	1980	0
59	24	3' 1L T12	N14S	1L3' STD/STD	2		2	46.0	0.09	New	N14S - Install new 4' 1L T8 strip	1L4' T8/ELE (SPEC COMBO LOW)	2	24.0	0.05	0.04	8672	8672	382
60	24	1L 4FT T8 ELE FIXT	NW	1L4' T8/ELE	1		1	30.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	30.0	0.03	0.00	8672	8672	0
61	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1485	1485	0
62	CAFETERIA	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	7		7	120.0	0.84	No work	NO WORK ON THESE FIXTURES	NO WORK	7	120.0	0.84	0.00	2475	2475	0
63	STORAGE	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1485	1485	0
64	STORAGE	2D LAMP FIXT	NW	16W CF/SI	8		8	18.0	0.14	No work	NO WORK ON THESE FIXTURES	NO WORK	8	18.0	0.14	0.00	1485	1485	0
65	CAFETERIA	2L 4FT T8 ELE FIXT	RL2	2L4' T8/ELE	46		46	60.0	2.76	Retrofit	Relamp	2L4' T8/ELE	46	60.0	2.76	0.00	2475	2475	0
66	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
67	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3762	3762	0
68	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
69	LOCKER ROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	4		4	120.0	0.48	No work	NO WORK ON THESE FIXTURES	NO WORK	4	120.0	0.48	0.00	4950	4950	0

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford Memorial Middle School

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
70	LOCKER ROOM	CF13/2	NW	13W CF/HW-2	2		2	31.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	2	31.0	0.06	0.00	4950	4950	0
71	LOCKER ROOM	CF13/2	NW	13W CF/HW-2	2		2	31.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	2	31.0	0.06	0.00	4950	4950	0
72	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
73	RESTROOM	CF13/2	NW	13W CF/HW-2	4		4	31.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	4	31.0	0.12	0.00	3564	3564	0
74	LOCKER ROOM	CF13/2	NW	13W CF/HW-2	4		4	31.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	4	31.0	0.12	0.00	4950	4950	0
75	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
76	LOCKER ROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	1		1	120.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	1	120.0	0.12	0.00	4950	4950	0
77	LOCKER ROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	2		2	120.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	2	120.0	0.24	0.00	4950	4950	0
78	LOCKER ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	4950	4950	0
79	LOCKER ROOM	CF13/2	NW	13W CF/HW-2	1		1	31.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	31.0	0.03	0.00	4950	4950	0
80	STORAGE	CF13/2	NW	13W CF/HW-2	2		2	31.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	2	31.0	0.06	0.00	1485	1485	0
81	OFFICE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1980	1980	0
82	LOCKER ROOM	CF13/2	NW	13W CF/HW-2	4		4	31.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	4	31.0	0.12	0.00	4950	4950	0
83	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
84	EQUIPMENT ROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	6		6	120.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	6	120.0	0.72	0.00	693	693	0
85	EQUIPMENT ROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	2		2	120.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	2	120.0	0.24	0.00	693	693	0
86	EQUIPMENT ROOM	CF 26W	NW	26W CF/HW	10		10	28.0	0.28	No work	NO WORK ON THESE FIXTURES	NO WORK	10	28.0	0.28	0.00	693	693	0
87	HALLWAY	CF 26W	NW	26W CF/HW	2		2	28.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	2	28.0	0.06	0.00	3762	3762	0
88	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	33		33	60.0	1.98	No work	NO WORK ON THESE FIXTURES	NO WORK	33	60.0	1.98	0.00	2178	2178	0
89	24	EXIT-LED	NW	EXIT LED	2		2	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	2	1.8	0.00	0.00	8672	8672	0
90	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	1485	1485	0
91	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
92	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford Memorial Middle School

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
93	STORAGE	2L 4FT T8 ELE FIXT	CFSIS15	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	Install new 15w CFSI spiral lamp	15w CFSI spiral	1	15.0	0.02	0.04	1485	1485	67
94	GYMNASIUM	HID-MH-400	NT5INDC4L	MH/FIXT HIGH BAY	24		24	440.0	10.56	New	Install New T5 System custom designed - 4L T5 HO type lamp with cage wireguard, slope back for gym ball setup.	4L T5 SPEC FIXTURE/ELE	24	220.0	5.28	5.17	2376	2376	12,545
95	GYMNASIUM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	12		12	60.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	12	60.0	0.72	0.00	2376	2376	0
96	24	EXIT-LED	NW	EXIT LED	4		4	1.8	0.01	No work	NO WORK ON THESE FIXTURES	NO WORK	4	1.8	0.01	0.00	8672	8672	0
97	EQUIPMENT ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	693	693	0
98	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
99	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
100	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
101	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
102	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	26		26	60.0	1.56	No work	NO WORK ON THESE FIXTURES	NO WORK	26	60.0	1.56	0.00	2178	2178	0
103	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	9		9	60.0	0.54	No work	NO WORK ON THESE FIXTURES	NO WORK	9	60.0	0.54	0.00	2178	2178	0
104	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	2178	2178	0
105	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
106	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
107	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
108	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
109	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
110	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	3		3	90.0	0.27	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	3	44.0	0.13	0.14	2178	2178	301
111	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	2	44.0	0.09	0.09	2178	2178	200
112	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
113	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	3		3	90.0	0.27	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	3	44.0	0.13	0.14	2178	2178	301
114	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	1980	1980	182
115	OFFICE	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	1980	1980	91

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford Memorial Middle School

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
116	RESTROOM	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
117	RESTROOM	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
118	RESTROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	3564	3564	164
119	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	1980	1980	182
120	OFFICE	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	1980	1980	91
121	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	1980	1980	91
122	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	1980	1980	91
123	STORAGE	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	1485	1485	0
124	CONFERENCE ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	6		6	90.0	0.54	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	6	44.0	0.26	0.27	1980	1980	546
125	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
126	CLASSROOM	CF 26W	NW	26W CF/HW	1		1	28.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	28.0	0.03	0.00	2178	2178	0
127	RESTROOM	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
128	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
129	CLASSROOM	CF 26W	NW	26W CF/HW	1		1	28.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	28.0	0.03	0.00	2178	2178	0
130	RESTROOM	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
131	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
132	CLASSROOM	CF 26W	NW	26W CF/HW	1		1	28.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	28.0	0.03	0.00	2178	2178	0
133	RESTROOM	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
134	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
135	CLASSROOM	CF 26W	NW	26W CF/HW	1		1	28.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	28.0	0.03	0.00	2178	2178	0
136	RESTROOM	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
137	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
138	CLASSROOM	CF 26W	NW	26W CF/HW	1		1	28.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	28.0	0.03	0.00	2178	2178	0

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford Memorial Middle School

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
139	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
140	CLASSROOM	CF 26W	NW	26W CF/HW	1		1	28.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	28.0	0.03	0.00	2178	2178	0
141	RESTROOM	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
142	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	9		9	90.0	0.81	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	9	44.0	0.40	0.41	2178	2178	902
143	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	2178	2178	144
144	CLASSROOM	2L T8U 2X2 FIXT	R22LRBB	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets. Back Up battery ballast	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2178	2178	72
145	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	3		3	90.0	0.27	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	3	44.0	0.13	0.14	2178	2178	301
146	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	6		5	90.0	0.54	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	5	44.0	0.22	0.31	2178	2178	697
147	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	2178	2178	144
148	CLASSROOM	2L T8U 2X2 FIXT	R22LRBB	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets. Back Up battery ballast	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2178	2178	72
149	RESTROOM	2D LAMP FIXT	NW	16W CF/SI	1		1	18.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	18.0	0.02	0.00	3564	3564	0
150	CLASSROOM	2L 4FT T8 ELE FIXT	R2LR	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.03	2178	2178	70
151	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	17		17	90.0	1.53	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	17	44.0	0.75	0.77	2178	2178	1,703
152	CLASSROOM	INC 90W-110W	NW	INCANDESCENT	3		3	100.0	0.30	No work	NO WORK ON THESE FIXTURES	NO WORK	3	100.0	0.30	0.00	2178	2178	0
153	CLASSROOM	INC 67W-80W	NW	INCANDESCENT	16		16	75.0	1.20	No work	NO WORK ON THESE FIXTURES	NO WORK	16	75.0	1.20	0.00	2178	2178	0
154	CLASSROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	1		1	120.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	1	120.0	0.12	0.00	2178	2178	0
155	CLASSROOM	4L 4FT T8 ELE FIXT	NW	4L4' T8/ELE	1		1	120.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	1	120.0	0.12	0.00	2178	2178	0
156	CLASSROOM	INC 90W-110W	NW	INCANDESCENT	3		3	100.0	0.30	No work	NO WORK ON THESE FIXTURES	NO WORK	3	100.0	0.30	0.00	2178	2178	0
157	CLASSROOM	INC 67W-80W	NW	INCANDESCENT	8		8	75.0	0.60	No work	NO WORK ON THESE FIXTURES	NO WORK	8	75.0	0.60	0.00	2178	2178	0
158	CLASSROOM	INC 67W-80W	NW	INCANDESCENT	8		8	75.0	0.60	No work	NO WORK ON THESE FIXTURES	NO WORK	8	75.0	0.60	0.00	2178	2178	0
159	CLASSROOM	3L 4FT T8 ELE FIXT	NW	3L4' T8/ELE	14		14	90.0	1.26	No work	NO WORK ON THESE FIXTURES	NO WORK	14	90.0	1.26	0.00	2178	2178	0
160	CLASSROOM	1L 4FT T8 ELE FIXT	NW	1L4' T8/ELE	2		2	30.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	2	30.0	0.06	0.00	2178	2178	0
161	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1485	1485	0

ECM #3 Lighting As-Built Savings Detail

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Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
162	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	9		9	90.0	0.81	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	9	44.0	0.40	0.41	2178	2178	902
163	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	2178	2178	144
164	CLASSROOM	2L T8U 2X2 FIXT	R22LRBB	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets. Back Up battery ballast	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2178	2178	72
165	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	9		9	90.0	0.81	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	9	44.0	0.40	0.41	2178	2178	902
166	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	2178	2178	144
167	CLASSROOM	2L T8U 2X2 FIXT	R22LRBB	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets. Back Up battery ballast	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2178	2178	72
168	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
169	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
170	CLASSROOM	CF 26W	NW	26W CF/HW	1		1	28.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	28.0	0.03	0.00	2178	2178	0
171	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
172	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
173	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
174	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
175	CLASSROOM	CF 26W	NW	26W CF/HW	1		1	28.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	28.0	0.03	0.00	2178	2178	0
176	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
177	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
178	CLASSROOM	CF 26W	NW	26W CF/HW	1		1	28.0	0.03	No work	NO WORK ON THESE FIXTURES	NO WORK	1	28.0	0.03	0.00	2178	2178	0
179	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
180	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
181	CLASSROOM	1L 3' T8 FIXT	NW	1L3' T8/ELE	6		6	29.0	0.17	No work	NO WORK ON THESE FIXTURES	NO WORK	6	29.0	0.17	0.00	2178	2178	0
182	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
183	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
184	CLASSROOM	1L 3' T8 FIXT	NW	1L3' T8/ELE	6		6	29.0	0.17	No work	NO WORK ON THESE FIXTURES	NO WORK	6	29.0	0.17	0.00	2178	2178	0

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford Memorial Middle School

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
185	LIBRARY	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	14		14	90.0	1.26	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	14	44.0	0.62	0.63	2178	2178	1,403
186	LIBRARY	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	2	44.0	0.09	0.09	2178	2178	200
187	LIBRARY	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
188	LIBRARY	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
189	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	2178	2178	1,202
190	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	5		5	90.0	0.45	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	5	44.0	0.22	0.23	2178	2178	501
191	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
192	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
193	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
194	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	10		10	90.0	0.90	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	10	44.0	0.44	0.45	2178	2178	1,002
195	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	2	44.0	0.09	0.09	2178	2178	200
196	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
197	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
198	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
199	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
200	Office	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	3		3	90.0	0.27	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	3	44.0	0.13	0.14	1980	1980	273
201	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	11		11	90.0	0.99	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	11	44.0	0.48	0.50	2178	2178	1,102
202	CLASSROOM	3L 4FT T8 ELE FIXT	R2LRBB	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	Retrofit with 2lamp ballast and reflector	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
203	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	20		20	90.0	1.80	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	20	44.0	0.88	0.90	2178	2178	2,004
204	24	VENDMISER	VM	Vending Miser - soda-before avg.	1		1	280.0	0.28	New-S	Install venmis in vending machines	INSTALL SENSOR SPECIFIED	1	280.0	0.28	0.00	8672	4336	1,214
205	Office	ISOLE	ISOLE	INSTALL SENSOR SPECIFIED	0		0	250.0	0.00	New-S	Install Isole unit to control office equipment.	INSTALL SENSOR SPECIFIED	0	250.0	0.00	0.00	1980	1188	0
207	A	INSTALL OCCUPANCY SENSORS - WALL SWITCH			8	na	8		na	Install Sensor	Install Sensor - ws	Install Sensor - various load types	8	60.0	0.48	0.05	2488	1244	597

ECM #3 Lighting As-Built Savings Detail

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Full Summary of Lighting Measures for Implementation at

Hartford School District - Hartford Memorial Middle School

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
208	A	INSTALL OCCUPANCY SENSORS			67	na	67		na	Install Sensor	Install Sensor - ci-100	Install Sensor - various load types	67	400.0	26.80	2.68	2488	1866	16,667
209	A	INSTALL OCCUPANCY SENSORS			6	na	6		na	Install Sensor	Install Sensor - US2000h	Install Sensor - various load types	6	520.0	3.12	0.31	2488	1741	2,328
210							0								0.00		2488		
211	M	MISC. ECMS- (UNDISCOVERED)		Misc	1	0	1	0	0.00	New/Retrofit	Misc Retrofit and New Fixtures	MISC. ECMS- (UNDISCOVERED)	1	0	0.00	0.00	3110	3110	0
212		LAMP DISPOSAL - feet			8008	100%	8,009	0			LAMP DISPOSAL - feet		8,008						
213		PCB BALLAST DISPOSAL(lbs-est.)			2034	10%	203	0			PCB BALLAST DISPOSAL(lbs-est.)		203						
215																			
				TOTALS	11,078		2		74.990						51.275	23.715			74,746

(KW INCLUDES DIVERSITY FACTOR)

(KW DOES NOT INCLUDE SENSOR LOAD)

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Dothan Brook School

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information							
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
1	EXTERIOR	HID-MH-250	NW	MH/FIXT HIGH BAY	8		8	280.0	2.24	No work	NO WORK ON THESE FIXTURES	NO WORK	8	280.0	2.24	0.00	4455	4455	0
2	EXTERIOR	INC 90W-110W	RC26H	INCANDESCENT	4		4	100.0	0.40	New/Retrofit	CPFL26HW RETRO- Retrofit the existing fixture with a 1L 26 watt cpfl kit.	26W CF/HW	4	28.0	0.11	0.28	4455	4455	1,283
3	EXTERIOR	HID-MH-100	NW	MH/FIXT LOW BAY	5		5	125.0	0.63	No work	NO WORK ON THESE FIXTURES	NO WORK	5	125.0	0.63	0.00	4455	4455	0
4	EXTERIOR	HID-MH-100	NW	MH/FIXT LOW BAY	3		3	125.0	0.38	No work	NO WORK ON THESE FIXTURES	NO WORK	3	125.0	0.38	0.00	4455	4455	0
5	STORAGE	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	4		4	120.0	0.48	Retrofit	Retrofit with 2 4' reflectors, 2 T8 4' lamps, and 1 2lamp low power ballast	2L4' T8/ELE (STD LOW)	4	44.0	0.18	0.30	1485	1485	451
6	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	13		13	90.0	1.17	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	13	44.0	0.57	0.59	2178	2178	1,302
7	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
8	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	3		3	90.0	0.27	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	3	44.0	0.13	0.14	2178	2178	301
9	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
10	CONFERENCE ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2574	2574	237
11	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
12	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	5		5	90.0	0.45	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	5	44.0	0.22	0.23	2178	2178	501
13	OFFICE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	2178	2178	144
14	STORAGE	CF-13W	NW	13W CF/HW-1	1		1	15.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	15.0	0.02	0.00	1485	1485	0
15	STORAGE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	1485	1485	49
16	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
17	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2178	2178	200
18	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2178	2178	200
19	CONFERENCE ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	10		10	90.0	0.90	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	10	44.0	0.44	0.45	2574	2574	1,184
20	24	EXIT-DS	EXR	INCANDESCENT	2		2	40.0	0.08	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	2	1.8	0.00	0.07	8672	8672	663
21	CONFERENCE ROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	4		4	62.0	0.25	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	4	29.0	0.12	0.13	2574	2574	340
22	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	3465	3465	114
23	RESTROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	3465	3465	0
24	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
25	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
26	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at
Hartford School District - Dothan Brook School

Diversity factor for energy (kWh) existing: 100.0%
Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%
Operating Hours Diversity= 99.0%
Diversity factor for proposed demand saved(KW): 98.0%
Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity
Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
27	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
28	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
29	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1485	1485	0
30	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	3465	3465	114
31	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
32	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
33	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	1782	1782	59
34	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
35	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
36	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	8		8	90.0	0.72	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	8	44.0	0.35	0.36	1782	1782	656
37	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
38	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2178	2178	401
39	CONFERENCE ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2574	2574	237
40	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2178	2178	200
41	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	18		18	90.0	1.62	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	18	44.0	0.79	0.81	1782	1782	1,475
42	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
43	EQUIPMENT ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	693	693	32
44	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	21		21	90.0	1.89	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	21	44.0	0.92	0.95	1782	1782	1,721
45	STORAGE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	1485	1485	49
46	STORAGE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	1485	1485	49
47	STORAGE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	1485	1485	49
48	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
49	CONFERENCE ROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	2574	2574	237
50	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	6		6	90.0	0.54	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	6	44.0	0.26	0.27	2178	2178	601
51	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	2		2	90.0	0.18	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	2	44.0	0.09	0.09	1782	1782	164
52	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	2		2	62.0	0.12	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	2	29.0	0.06	0.06	1782	1782	118

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at
Hartford School District - Dothan Brook School

Diversity factor for energy (kWh) existing: 100.0%
Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%
Operating Hours Diversity= 99.0%
Diversity factor for proposed demand saved(KW): 98.0%
Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity
Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
53	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
54	EQUIPMENT ROOM	INC 90W-110W	NW	INCANDESCENT	1		1	100.0	0.10	No work	NO WORK ON THESE FIXTURES	NO WORK	1	100.0	0.10	0.00	693	693	0
55	OFFICE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	4		4	62.0	0.25	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	4	29.0	0.12	0.13	2178	2178	287
56	OFFICE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	4		4	62.0	0.25	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	4	29.0	0.12	0.13	2178	2178	287
57	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
58	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	14		14	90.0	1.26	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	14	44.0	0.62	0.63	1782	1782	1,148
59	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	14		14	90.0	1.26	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	14	44.0	0.62	0.63	1782	1782	1,148
60	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
61	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
62	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
63	LIBRARY	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	6		6	90.0	0.54	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	6	44.0	0.26	0.27	2178	2178	601
64	LIBRARY	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	8		8	90.0	0.72	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	8	44.0	0.35	0.36	2178	2178	802
65	LIBRARY	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	22		22	90.0	1.98	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	22	44.0	0.97	0.99	2178	2178	2,204
65	LIBRARY	6L 4FT T8 ELE FIXT	R4LR	6l4' T8/ELE - TW - 2ba	1		1	180.0	0.18	Retrofit	retrofit with 1 - 4 lamp t8 LOW ballast, 4 t8 lamps, reflectors, and new sockets.	4L4' T8/ELE/REFL (STD LOW)	1	87.0	0.09	0.09	2178	2178	203
66	LIBRARY	CF13/2	NW	13W CF/HW-2	5		5	31.0	0.16	No work	NO WORK ON THESE FIXTURES	NO WORK	5	31.0	0.16	0.00	2178	2178	0
67	LIBRARY	EXIT-DS	EXR	INCANDESCENT	2		2	40.0	0.08	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	2	1.8	0.00	0.07	2178	2178	166
68	LIBRARY	3L 4FT T8 ELE FIXT	RL3	3L4' T8/ELE	28		28	90.0	2.52	Retrofit	Relamp existing 3L fixture	3L4' T8/ELE	28	90.0	2.52	0.00	2178	2178	0
69	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
70	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	9		9	90.0	0.81	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	9	44.0	0.40	0.41	1782	1782	738
71	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	5		5	90.0	0.45	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	5	44.0	0.22	0.23	2178	2178	501
72	STORAGE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	1485	1485	49
73	OFFICE	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	1		1	120.0	0.12	Retrofit	Retrofit with 2 4' reflectors, 2 T8 4' lamps, and 1 2lamp low power ballast	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.07	2178	2178	166
74	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1485	1485	0
75	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	6	29.0	0.17	0.19	3465	3465	686
76	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1485	1485	0
77	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	6	29.0	0.17	0.19	3465	3465	686

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at
Hartford School District - Dothan Brook School

Diversity factor for energy (kWh) existing: 100.0%
Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%
Operating Hours Diversity= 99.0%
Diversity factor for proposed demand saved(KW): 98.0%
Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity
Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
78	STORAGE	2L 4FT T8 ELE FIXT	R24strpLR	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	2 Lamp 4' Retrofit Lowpower ballast low power 800 series lamps	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.02	1485	1485	24
79	EQUIPMENT ROOM	2L 4FT T8 ELE FIXT	R24strpLR	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	2 Lamp 4' Retrofit Lowpower ballast low power 800 series lamps	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.02	693	693	11
80	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
81	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
82	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
83	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
84	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3762	3762	0
85	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3762	3762	0
86	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
87	24	EXIT-DS	EXR	INCANDESCENT	2		2	40.0	0.08	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	2	1.8	0.00	0.07	8672	8672	663
88	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
89	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	12		12	60.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	12	60.0	0.72	0.00	3762	3762	0
90	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	3762	3762	124
91	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	11		11	60.0	0.66	No work	NO WORK ON THESE FIXTURES	NO WORK	11	60.0	0.66	0.00	3762	3762	0
92	24	EXIT-DS	EXR	INCANDESCENT	3		3	40.0	0.12	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	3	1.8	0.01	0.11	8672	8672	994
93	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
94	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3762	3762	0
95	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3762	3762	0
96	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	3762	3762	124
97	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3762	3762	0
98	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
99	EQUIPMENT ROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	693	693	0
100	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	1		1	60.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	1	60.0	0.06	0.00	1485	1485	0
101	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	6	29.0	0.17	0.19	3465	3465	686
102	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	6	29.0	0.17	0.19	3465	3465	686
103	EQUIPMENT ROOM	2L 4FT T8 ELE FIXT	R24strpLR	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	2 Lamp 4' Retrofit Lowpower ballast low power 800 series lamps	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.02	693	693	11

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at
Hartford School District - Dothan Brook School

Diversity factor for energy (kWh) existing: 100.0%
Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%
Operating Hours Diversity= 99.0%
Diversity factor for proposed demand saved(KW): 98.0%
Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity
Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information								
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
104	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	12		12	60.0	0.72	No work	NO WORK ON THESE FIXTURES	NO WORK	12	60.0	0.72	0.00	3762	3762	0
105	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	3762	3762	124
106	HALLWAY	EXIT-DS	EXR	INCANDESCENT	2		2	40.0	0.08	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	2	1.8	0.00	0.07	3762	3762	287
107	HALLWAY	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	3762	3762	144
108	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	9		9	60.0	0.54	No work	NO WORK ON THESE FIXTURES	NO WORK	9	60.0	0.54	0.00	3762	3762	0
109	HALLWAY	EXIT-DS	EXR	INCANDESCENT	2		2	40.0	0.08	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	2	1.8	0.00	0.07	3762	3762	287
110	HALLWAY	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	3762	3762	144
111	HALLWAY	2L 4FT T8 ELE FIXT	RL2	2L4' T8/ELE	3		3	60.0	0.18	Retrofit	Relamp	2L4' T8/ELE	3	56.0	0.17	0.01	3762	3762	45
112	HALLWAY	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	4		4	62.0	0.25	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	4	29.0	0.12	0.13	3762	3762	497
113	HALLWAY	HID-MH-150	RC242S	MH/FIXT LOW BAY	6		6	185.0	1.11	Retrofit	Retrofit existing HID uplight with 2L 42W CUSTOM CFL kit.	42w CF/HW	6	44.0	0.26	0.83	3762	3762	3,183
114	24	EXIT-DS	EXR	INCANDESCENT	2		2	40.0	0.08	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	2	1.8	0.00	0.07	8672	8672	663
115	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
116	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	4		4	60.0	0.24	No work	NO WORK ON THESE FIXTURES	NO WORK	4	60.0	0.24	0.00	3762	3762	0
117	HALLWAY	HID-MH-150	RC242S	MH/FIXT LOW BAY	8		8	185.0	1.48	Retrofit	Retrofit existing HID uplight with 2L 42W CUSTOM CFL kit.	42w CF/HW	8	44.0	0.35	1.11	3762	3762	4,244
118	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
119	24	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	8672	8672	286
120	CLASSROOM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	1782	1782	0
121	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	11		11	60.0	0.66	No work	NO WORK ON THESE FIXTURES	NO WORK	11	60.0	0.66	0.00	3762	3762	0
122	24	EXIT-DS	EXR	INCANDESCENT	2		2	40.0	0.08	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	2	1.8	0.00	0.07	8672	8672	663
123	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
124	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	3		3	60.0	0.18	No work	NO WORK ON THESE FIXTURES	NO WORK	3	60.0	0.18	0.00	3762	3762	0
125	EQUIPMENT ROOM	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	1		1	120.0	0.12	Retrofit	Retrofit with 2 4' reflectors, 2 T8 4' lamps, and 1 2lamp low power ballast	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.07	693	693	53
126	EQUIPMENT ROOM	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	4		4	120.0	0.48	Retrofit	Retrofit with 2 4' reflectors, 2 T8 4' lamps, and 1 2lamp low power ballast	2L4' T8/ELE (STD LOW)	4	44.0	0.18	0.30	693	693	211
127	GYMNASIUM	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	16		16	60.0	0.96	No work	NO WORK ON THESE FIXTURES	NO WORK	16	60.0	0.96	0.00	2475	2475	0
128	GYMNASIUM	HID-MH-400	NT5INDC4L	MH/FIXT HIGH BAY	16		16	440.0	7.04	New	Install New T5 System custom designed - 4L T5 HO type lamp with cage wireguard, slope back for gym ball setup.	4L T5 SPEC FIXTURE/ELE	16	220.0	3.52	3.45	2475	2475	8,712
129	24	EXIT-DS	EXR	INCANDESCENT	4		4	40.0	0.16	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	4	1.8	0.01	0.15	8672	8672	1,325

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at
Hartford School District - Dothan Brook School

Diversity factor for energy (kWh) existing: 100.0%
Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%
Operating Hours Diversity= 99.0%
Diversity factor for proposed demand saved(KW): 98.0%
Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity
Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information							
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
130	STORAGE	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	2		2	120.0	0.24	Retrofit	Retrofit with 2 4' reflectors, 2 T8 4' lamps, and 1 2lamp low power ballast	2L4' T8/ELE (STD LOW)	2	44.0	0.09	0.15	1485	1485	226
131	STORAGE	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	3		3	120.0	0.36	Retrofit	Retrofit with 2 4' reflectors, 2 T8 4' lamps, and 1 2lamp low power ballast	2L4' T8/ELE (STD LOW)	3	44.0	0.13	0.22	1485	1485	339
131	STORAGE	4L 4FT T8 ELE FIXT	R1	4L4' T8/ELE	2		2	120.0	0.24	Retrofit	B/L RETROFIT- use 1, 1 Lamp t8 ballast, 1 t8 lamp, and new sockets.	1L4' T8/ELE	2	28.0	0.06	0.18	1485	1485	273
132	EQUIPMENT ROOM	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	1		1	120.0	0.12	Retrofit	Retrofit with 2 4' reflectors, 2 T8 4' lamps, and 1 2lamp low power ballast	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.07	693	693	53
133	Office	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	1		1	90.0	0.09	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	1	44.0	0.04	0.05	2178	2178	100
134	STORAGE	CF-13W	NW	13W CF/HW-1	1		1	15.0	0.02	No work	NO WORK ON THESE FIXTURES	NO WORK	1	15.0	0.02	0.00	1485	1485	0
135	STORAGE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	1485	1485	49
136	STORAGE	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	1		1	120.0	0.12	Retrofit	Retrofit with 2 4' reflectors, 2 T8 4' lamps, and 1 2lamp low power ballast	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.07	1485	1485	113
137	HALLWAY	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	3762	3762	0
138	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
139	STORAGE	2L 4FT T8 ELE FIXT	NW	2L4' T8/ELE	2		2	60.0	0.12	No work	NO WORK ON THESE FIXTURES	NO WORK	2	60.0	0.12	0.00	1485	1485	0
140	CAFETERIA	2L 4FT T8 ELE FIXT	RL2	2L4' T8/ELE	21		21	60.0	1.26	Retrofit	Relamp	2L4' T8/ELE	21	56.0	1.18	0.08	2079	2079	175
141	24	EXIT-DS	EXR	INCANDESCENT	3		3	40.0	0.12	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	3	1.8	0.01	0.11	8672	8672	994
142	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
143	CAFETERIA	2L 4FT T8 ELE FIXT	RL	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	Relamp	1L4' T8/ELE	1	28.0	0.03	0.03	2079	2079	67
144	CAFETERIA	INC 67W-80W	CFSIS25	INCANDESCENT	2		2	75.0	0.15	Retrofit	Install new 25w CFSI spiral lamp	25w CFSI spiral	2	25.0	0.05	0.10	2079	2079	208
145	STORAGE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	1485	1485	49
146	CAFETERIA	4L 4FT T8 ELE FIXT	R2LR	4L4' T8/ELE	24		24	120.0	2.88	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	24	44.0	1.06	1.79	2079	2079	3,792
147	24	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	8672	8672	331
148	24	EXIT-LED	NW	EXIT LED	1		1	1.8	0.00	No work	NO WORK ON THESE FIXTURES	NO WORK	1	1.8	0.00	0.00	8672	8672	0
149	CAFETERIA	2L 4FT T8 ELE FIXT	RL2	2L4' T8/ELE	3		3	60.0	0.18	Retrofit	Relamp	2L4' T8/ELE	3	56.0	0.17	0.01	2079	2079	25
150	24	EXIT-DS	EXR	INCANDESCENT	2		2	40.0	0.08	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	2	1.8	0.00	0.07	8672	8672	663
151	STORAGE	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	1		1	120.0	0.12	Retrofit	Retrofit with 2 4' reflectors, 2 T8 4' lamps, and 1 2lamp low power ballast	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.07	1485	1485	113
152	RESTROOM	CF13/2	NW	13W CF/HW-2	2		2	31.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	2	31.0	0.06	0.00	3465	3465	0
153	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	4		4	62.0	0.25	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	4	29.0	0.12	0.13	3465	3465	457
154	RESTROOM	CF13/2	NW	13W CF/HW-2	2		2	31.0	0.06	No work	NO WORK ON THESE FIXTURES	NO WORK	2	31.0	0.06	0.00	3465	3465	0

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Dothan Brook School

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information							
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	Exist E Hrs/Yr	Prop P Hrs/Yr.	Kwh/Yr Saved
155	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	4		4	62.0	0.25	Retrofit	retrofit with 1 - 2 lamp F17 LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	4	29.0	0.12	0.13	3465	3465	457
156	24	VENDMISER	VM	Vending Miser - soda-before avg.	2		2	280.0	0.56	New-S	Install venmis in vending machines	INSTALL SENSOR SPECIFIED	2	280.0	0.56	0.00	8672	4336	2,428
157	Office	ISOLE	ISOLE	INSTALL SENSOR SPECIFIED	0		0	250.0	0.00	New-S	Install Isole unit to control office equipment.	INSTALL SENSOR SPECIFIED	0	250.0	0.00	0.00	2178	1307	0
159	A	INSTALL OCCUPANCY SENSORS - WALL SWITCH			11	na	11		na	Install Sensor	Install Sensor - ws	Install Sensor - various load types	11	96.0	1.06	0.11	2718	1766	1,004
160	A	INSTALL OCCUPANCY SENSORS			65	na	65		na	Install Sensor	Install Sensor - ci-100	Install Sensor - various load types	65	400.0	26.00	2.60	2718	2038	17,664
161	A	INSTALL OCCUPANCY SENSORS			1	na	1		na	Install Sensor	Install Sensor - Photocell	Install Sensor - various load types	1	150.0	0.15	0.02	2718	1902	122
162	A	INSTALL OCCUPANCY SENSORS			6	na	6		na	Install Sensor	Install Sensor - US2000h	Install Sensor - various load types	6	540.0	3.24	0.32	2718	1631	3,522
179	M	MISC. ECMS- (UNDISCOVERED)	Misc		1	0	1	0	0.00	New/Retrofit	Misc Retrofit and New Fixtures	MISC. ECMS- (UNDISCOVERED)	1	0	0.00	0.00	3397	3397	0
180		LAMP DISPOSAL - feet			7298	100%	7,299	0			LAMP DISPOSAL - feet		7,298						
181		PCB BALLAST DISPOSAL(lbs-est.)			1792	10%	179	0			PCB BALLAST DISPOSAL(lbs-est.)		179						
183																			
							(KW INCLUDES DIVERSITY FACTOR)							(KW DOES NOT INCLUDE SENSOR LOAD)					
				TOTALS	9,928	2			68.755				8,316		39.283	29.472			99,246

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Ottauquechee School

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information						Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
101	HALLWAY	EXIT-DS	EXR	INCANDESCENT	2		2	40.0	0.08	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	2	1.8	0.00	0.07	3762	3762	287
102	HALLWAY	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	3762	3762	144
103	STORAGE	2L 4FT T8 ELE FIXT	R1LR	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	B/L/s-R RETROFIT- use 1 1 Lamp t8 LOW ballast, custom silver reflector, 1 t8 lamps and new sockets to retrofit the existing fixture.	1L4' T8/ELE (STD LOW)	1	22.0	0.02	0.04	1485	1485	56
104	STORAGE	2L 4FT T8 ELE FIXT	R1LR	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	B/L/s-R RETROFIT- use 1 1 Lamp t8 LOW ballast, custom silver reflector, 1 t8 lamps and new sockets to retrofit the existing fixture.	1L4' T8/ELE (STD LOW)	1	22.0	0.02	0.04	1485	1485	56
105	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	Retrofit with 1 - 2 lamp LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	6	29.0	0.17	0.19	3465	3465	686
106	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	6		6	62.0	0.37	Retrofit	Retrofit with 1 - 2 lamp LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	6	29.0	0.17	0.19	3465	3465	686
107	STORAGE	2L 4FT T8 ELE FIXT	RL2	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	Relamp fixture with new Energy Saving T8 lamps	2L4' T8/ELE (30w LAMP, NP BALLAST)	1	56.0	0.06	0.00	1485	1485	6
108	LIBRARY	3L 4FT T8 ELE FIXT	R3	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L RETROFIT- use 1, 3 lamp t8 ballast, 3 t8 lamps, and new sockets.	3L4' T8/ELE (SPEC COMBO LOW)	12	65.0	0.78	0.29	2178	2178	653
109	LIBRARY	CF13/2	NW	13W CF/HW-2	6		6	31.0	0.19	No work	NO WORK ON THESE FIXTURES	NO WORK	6	31.0	0.19	0.00	2178	2178	0
110	LIBRARY	3L 4FT T8 ELE FIXT	R4LR	3L4' T8/ELE	2		1	90.0	0.18	Retrofit	retrofit with 1 - 4 lamp t8 LOW ballast, 4 t8 lamps, reflectors, and new sockets.	4L4' T8/ELE/REFL (STD LOW)	1	87.0	0.09	0.09	2178	2178	203
111	LIBRARY	EXIT-DS	EXR	INCANDESCENT	3		3	40.0	0.12	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	3	1.8	0.01	0.11	2178	2178	250
112	LIBRARY	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	23		23	90.0	2.07	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	23	44.0	1.01	1.04	2178	2178	2,304
113	OFFICE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	2178	2178	401
114	STORAGE	4L 4FT T8 ELE FIXT	R28strpLR	4L4' T8/ELE	1		1	120.0	0.12	Retrofit	Retrofit with a 2 lamp Low Ballast Factor ballast, 2 T8 lamps, strip reflector and new sockets	2L4' T8/ELE (STD LOW)	1	44.0	0.04	0.07	1485	1485	113
115	HALLWAY	2L 4FT T8 ELE FIXT	RL2	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	Relamp fixture with new Energy Saving T8 lamps	2L4' T8/ELE (30w LAMP, NP BALLAST)	2	56.0	0.11	0.01	3762	3762	30
116	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
117	CLASSROOM	1L 4FT T8 ELE FIXT	NW	1L4' T8/ELE	5		5	30.0	0.15	No work	NO WORK ON THESE FIXTURES	NO WORK	5	30.0	0.15	0.00	1782	1782	0
118	STORAGE	2L 4FT T8 ELE FIXT	RL2	2L4' T8/ELE	2		2	60.0	0.12	Retrofit	Relamp fixture with new Energy Saving T8 lamps	2L4' T8/ELE (30w LAMP, NP BALLAST)	2	56.0	0.11	0.01	1485	1485	12
119	STORAGE	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	Retrofit with 1 - 2 lamp LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	1485	1485	49
120	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	15		15	90.0	1.35	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	15	44.0	0.66	0.68	1782	1782	1,230
121	STORAGE	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	4		4	90.0	0.36	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	4	44.0	0.18	0.18	1485	1485	273
122	STORAGE	2L 4FT T8 ELE FIXT	RL2	2L4' T8/ELE	1		1	60.0	0.06	Retrofit	Relamp fixture with new Energy Saving T8 lamps	2L4' T8/ELE (30w LAMP, NP BALLAST)	1	56.0	0.06	0.00	1485	1485	6

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Ottauquechee School

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information										Proposed Fixture Information						Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
123	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	7		7	90.0	0.63	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	7	44.0	0.31	0.32	1782	1782	574
124	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
125	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
126	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
127	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
128	RESTROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	Retrofit with 1 - 2 lamp LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	3465	3465	114
129	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
130	CLASSROOM	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	1782	1782	68
131	CLASSROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	Retrofit with 1 - 2 lamp LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	1782	1782	59
132	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
133	CLASSROOM	EXIT-DS	EXR	INCANDESCENT	1		1	40.0	0.04	Retrofit	Retrofit the existing exit sign with new 1.8 watt LED kit.	EXIT LED	1	1.8	0.00	0.04	1782	1782	68
134	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
135	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
136	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	14		14	90.0	1.26	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	14	44.0	0.62	0.63	1782	1782	1,148
137	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	14		14	90.0	1.26	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	14	44.0	0.62	0.63	1782	1782	1,148
138	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
139	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
140	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
141	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	12		12	90.0	1.08	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	12	44.0	0.53	0.54	1782	1782	984
142	CLASSROOM	3L 4FT T8 ELE FIXT	R2LR	3L4' T8/ELE	6		6	90.0	0.54	Retrofit	B/L/s-R RETROFIT- use 1 2 Lamp t8 LOW ballast, custom silver reflector, 2 t8 lamps and new sockets to retrofit the existing fixture.	2L4' T8/ELE/REFL (STD LOW)	6	44.0	0.26	0.27	1782	1782	492
143	CONFERENCE ROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	5		5	62.0	0.31	Retrofit	Retrofit with 1 - 2 lamp LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	5	29.0	0.15	0.16	2574	2574	425
144	CONFERENCE ROOM	2L T8U 2X2 FIXT	R22LR	2-U-L T8/ELE	1		1	62.0	0.06	Retrofit	Retrofit with 1 - 2 lamp LOW ballast, 2 F17 lamps, reflector and new sockets.	2LF17 T8/ELE/REFL (STD LOW)	1	29.0	0.03	0.03	2574	2574	85

ECM #3 Lighting As-Built Savings Detail

Full Summary of Lighting Measures for Implementation at

Hartford School District - Ottauquechee School

Sensors Savings hrs Diversity= 100.0%

Operating Hours Diversity= 99.0%

Diversity factor for energy (kWh) existing: 100.0%

Diversity factor for existing demand (KW): 100.0%

Diversity factor for proposed demand saved(KW): 98.0%

Accts. for KW diversity and (KWh) Ballast & Lamp type Diversity

Diversity factor for proposed demand (KW): 100.0%

	Existing Fixture Information											Proposed Fixture Information					Exist	Prop	Kwh/Yr
Item #	Area Code	E Fixt. Desc.	Note/ECM	E Fixture Type	E S # Fixt	E TW # Fixt	Exist. TTL Fixtures	E W/Fixt (div)	E Total KW	Action	Description of Proposed Measure	P Fixture Type	Prop. TTL Fixtures	P W/Fixt	P Total Kw	Kw Saved (*div)	E Hrs/Yr	P Hrs/Yr.	Saved
145	24	VENDMISER	VM	Vending Miser - soda-before avg.	1		1	280.0	0.28	New-S	Install venmis in vending machines	INSTALL SENSOR SPECIFIED	1	280.0	0.28	0.00	8672	4336	1,214
146	Office	ISOLE	ISOLE	INSTALL SENSOR SPECIFIED	0		0	250.0	0.00	New-S	Install Isole unit to control office equipment.	INSTALL SENSOR SPECIFIED	0	250.0	0.00	0.00	2178	1307	0
148	A	INSTALL OCCUPANCY SENSORS - WALL SWITCH			2	na	2		na	Install Sensor	Install Sensor - ws	Install Sensor - various load types	2	96.0	0.19	0.02	2605	1563	200
149	A	INSTALL OCCUPANCY SENSORS			64	na	64		na	Install Sensor	Install Sensor - ci-100	Install Sensor - various load types	64	400.0	25.60	2.56	2605	2084	13,337
150	A	INSTALL OCCUPANCY SENSORS			6	na	6		na	Install Sensor	Install Sensor - US2000h	Install Sensor - various load types	6	540.0	3.24	0.32	2605	1563	3,376
151							0								0.00		2605		
152	M	MISC. ECMS- (UNDISCOVERED)		Misc	1	0	1	0	0.00	New/Retrofit	Misc Retrofit and New Fixtures	MISC. ECMS- (UNDISCOVERED)	1	0	0.00	0.00	3256	3256	0
153		LAMP DISPOSAL - feet			5,853	100%	5,854	0			LAMP DISPOSAL - feet		5,853						
154		PCB BALLAST DISPOSAL(lbs-est.)			1,408	10%	141	0			PCB BALLAST DISPOSAL(lbs-est.)		141						
155		MISC.				1	1				MISC.		1						
156																			
								(KW INCLUDES DIVERSITY FACTOR)						(KW DOES NOT INCLUDE SENSOR LOAD)					
				TOTALS	7,971	2			53.297				6,705		29.418	23.879			76,902

ECM #4 Water As-Built Savings Detail

Domestic Fixture Count and Savings for Hartford School District

The following calculation for Water and Energy Savings can be applied to all Bathroom Fixtures:		
Frequency of Use (uses/yr), (flushes/yr, min/yr)	=	[(Number of Users (FT Male) x Fixture Uses/Day/Person) +(Number of Users (PT Male) x Fixture Uses/Day/Person) + (Number of Users (FT Female) x Fixture Uses/Day/Person) + (Number of Users (PT Female) x Fixture Uses/Day/Person)] x days/wk x 52 wks/yr
Existing & Proposed Water Usage (gal/yr), (toilets & urinals)	=	Frequency of Use x [(Number of High Flow Fixtures / Total Number of Fixtures) x High Flow Rate (gpf per fixture) + (Number of Low Flow Fixtures / Total Number of Fixtures) x Low Flow Rate (gpf per fixture)]
Existing Water Usage (gal/yr), (sinks & showers)	=	Frequency of Use x Average Flowrate of Current Fixtures (gpm)
Proposed Water Usage (gal/yr), (sinks & showers)	=	Frequency of Use x Proposed Flowrate (gpm)
Water Savings (gal/yr)	=	Existing Water Usage - Proposed Water Usage
Sink Energy Savings (MMBtu/yr)	=	Sink Water Savings (gal/yr) x 1/3 (Hot Water to Sinks) x 8.34 lb/gal x (120°F – 55°F) Domestic Hot Water Temp. – City Water Temp. x 1 Btu/lb-F x (1 MMBtu / 1,000,000 Btu)

Domestic Fixture Counts — Public/Student/Staff Restrooms

Building	Toilets		Urinals		Aerated Sinks	Avg. Sink gpm	Showers
	High Flow	Low Flow	High Flow	Low Flow			
High School	51	0	6	0	41	2.2	1
Middle School	6	10	0	15	4	2.2	10
Dothan Brook School	26	0	0	7	50	2.2	0
Ottauquechee Shool	24	0	0	6	30	2.2	0
Total	**107**	**10**	**6**	**28**	**125**		**11**

Demographic Data — Full-Time / Part-Time Occupancy Break-Down (including % Year Round Occupancy)

Building	Full-Time				Part-Time			Days/Week
	Faculty	Students	Total Men	Total Women	Students	Total Men	Total Women	Open
High School	100	800	400	400	380	190	190	5
Middle School	50	396	198	198	0	0	0	5
Dothan Brook School	50	284	142	142	0	0	0	5
Ottauqechee Shool	50	284	142	142	0	0	0	5
Total	**250**	**1,764**	**882**	**882**	**380**	**190**	**190**	

Frequency of Use Assumptions

Usage Assumptions	Toilet Flushes per Day Full-Time	Toilet Flushes per Day Part-Time	Urinal Flushes per Day Full-Time	Urinal Flushes per Day Part-Time	Sink Min/Use	Showers Min/use
Men	1.00	0.50	1.0	0.5	0.2	5
Women	2.00	1.00	0.0	0.0		

Shower % Hot Water	50%		
Sink Percent Hot Water	33%		
Student % Year Round Occupancy	85%	**Percent Male Students**	50%
Staff % Year Round Occupancy	85%	**Percent Male Staff**	50%

Water Consumption Assumptions

Flow Assumptions	Existing High Flow Units	Proposed Low Flow Units
Toilets (gpf)	3.5	1.5
Urinal (gpf)	1.5	1.0
Sinks (gpm)	2.2	0.5
Showers	2.5	2.0

Domestic Fixture Consumption Data

Building	Usage Data: Toilets Flushes/Year	Usage Data: Urinals Flushes/Year	Usage Data: Sinks Min/Year	Toilet Water Usage: Existing (gal/year)	Toilet Water Usage: Proposed (gal/year)	Toilet Water Usage: Savings (gal/year)	Urinal Water Usage: Existing (gal/year)	Urinal Water Usage: Proposed (gal/year)	Urinal Water Usage: Savings (gal/year)	Sink Water Usage: Existing (gal/year)	Sink Water Usage: Proposed (gal/year)	Sink Water Usage: Savings (gal/year)	Sink Water Usage: Savings (MMBtu/yr)	Shower Water Usage: Showers Min/Year	Shower Water Usage: Existing (gal/year)	Shower Water Usage: Proposed (gal/year)	Shower Water Usage: Savings (gal/year)	Shower Water Usage: Savings (MMBtu/yr)
High School	274,725	91,575	73,260	961,538	412,088	549,450	137,363	73,260	64,103	161,172	36,630	124,542	23	925	2,313	1,850	463	0
Middle School	109,890	36,630	29,304	247,253	164,835	82,418	0	0	0	64,469	14,652	49,817	9	366,300	915,750	732,600	183,150	50
Dothan Brook School	78,810	26,270	21,016	275,835	118,215	157,620	0	0	0	46,235	10,508	35,727	6	0	0	0	0	0
Ottauquechee Shool	78,810	26,270	21,016	275,835	118,215	157,620	0	0	0	46,235	10,508	35,727	6	0	0	0	0	0
Total	**542,235**	**180,745**	**144,596**	**1,760,461**	**813,353**	**947,108**	**137,363**	**73,260**	**64,103**	**318,111**	**72,298**	**245,813**	**44**	**925**	**918,063**	**734,450**	**183,613**	**50**

Domestic Fixture Savings

Building	Water Savings (gal/yr)	Water Savings (CF/yr)	Energy Savings MMBtu/yr	Energy Savings Gal/yr	
High School	738,558	98,738	23	165	
Middle School	315,385	42,164	59	423	
Dothan Brook School	193,347	25,849	6	43	
Ottauquechee Shool	193,347	25,849	6	43	
Total	**1,440,637**	**192,599**	**94**	**673**	

Boiler Efficiency Testing

Hartford, VT School District
Boiler Efficiency Readings

	Guar Yr 2	Guarantee Year 1		Interim / Install Period						Base Yr	Proposed
	Oct/Nov 2010	10/28/09	9/30/09	10/30/08	5/29/08	2/29/08	1/9/08	3/11/08	12/18/07		Efficiency
High School											
Boiler #1	87.3%	82.1%									
Hot Water	86.3%	87.2%				82.0%				40.0%	80.0%
Middle School											
Boiler #1		90.4%									
Low Fire	87.4%										
Hi Fire	82.4%										
Boiler #2									85.7%	70.0%	85.0%
Low Fire	90.7%										
Hi Fire	87.7%										
Dothan Brook											
Boiler #2 (Left)		Not Running: Put on ControlTec System 10/28/09									
Low Fire	89.4%										
Hi Fire	86.0%										
Boiler #1 (Right)				86.1%							80.0%
Low Fire	90.0%	89.3%									
Hi Fire	88.5%	87.5%			85.0%						
Hot Water	81.0%	84.0%									
Ottauquechee School											
Boiler #1											
Low Fire	85.1%	87.5%					85.0%				80.0%
Hi Fire	85.3%	84.9%									
Boiler #2											
Low Fire	86.9%	84.6%					85.0%				
Hi Fire	86.6%	82.4%									
Hot Water	86.0%	84.1%									
White River School											
Boiler #1											
Low Fire	88.6%	87.4%						83.0%			80.0%
Hi Fire		84.6%									
Boiler #2											
Low Fire	87.6%	87.7%									
Hi Fire		85.8%									
Gym											
Low Fire	90.0%	88.4%									
Hi Fire			86.4%								

Glossary of Terms

Actual Cost	Actual energy cost taken directly from utility bill.
Adjustment	Calculations used to bring energy usage in base year to the same set of conditions as the current year.
Balance Point Temperature (BPT)	For heating degree-days, the outdoor temperature below which space heating is required; for cooling degree-days, the outdoor temperature above which space cooling is required. This is typically 65 degrees, but varies based on building type, construction material, etc.
Baseline	The raw base year data adjusted by the energy impact of the variables between the years being compared.
BTU	British thermal unit; the quantity of heat required to raise the temperature of one pound of water by one degree Fahrenheit.
BTUh	The quantity of heat generated/consumed over a one hour period.
CCF	An industry standard measure of a gaseous fuel, typically natural gas, having a volume of 100 cubic feet. (See also Therm)
CDD	Cooling Degree-Day; a value that represents weather condition severity. It is the monthly sum of the daily mean temperature (measured by the National Weather Service) above the cooling Balance Point.
Cost Avoidance	The difference between the actual cost incurred during a selected time period versus what the cost would have been had the cost avoidance strategy not been implemented.
Decatherm	The energy content of a 1,000 cubic feet volume of a gaseous fuel; sometimes used as a synonymous term for MCF. Technically, however, a decatherm is the Btu heat content of 1,000 cubic feet of a gaseous fuel, where the Btu content varies based on source and quality.
ECM	The Energy Conservation Measure (ECM) is the installation of equipment or systems, or modification of equipment or systems, for the purpose of reducing utility (energy, water, etc.) consumption, demand and costs and/or non-utility (O&M, operational) costs.
EMS	Energy Management System; a computer that can be programmed to control and/or monitor the operations of energy-consuming equipment in a facility.
Guarantee Period	The period beginning on the first (1st) day of the First Guarantee Year and ending on the last day of the final Guarantee Year. Also known as the "Measurement and Verification Phase" or "Performance Period".
Guarantee Year	The First Guarantee Year and each of the successive twelve (12) month periods commencing on the anniversary of the commencement of the First Guarantee Year throughout the term of the agreement.

Glossary of Terms

Guaranteed Savings	The amount of avoided Energy and Operational Costs necessary to pay for the cost of the Work and Support Services incurred by the customer in each Guarantee Year.
HDD	Heating Degree-Day; a value that represents weather condition severity. It is the monthly sum of the daily mean temperature (measured by the National Weather Service) below the heating Balance Point.
HVAC	Industry standard abbreviation for Heating, Ventilating and Air Conditioning.
kW	Kilowatt; a unit of electrical power, equal to 1000 watts.
kWh	Kilowatt hours; a unit of electrical energy or work, equal to that done by one kilowatt acting for one hour.
Load Factor	The percentage of time that a piece of equipment operates at full load over a measured time period. (i.e. Lights are operated at 100% Load Factor. Refrigerators, on the other hand, operate at less than 100% load based on internal and external temperatures while also cycling on & off as needed to maintain a temperature set point.)
M&V	Measurement and verification; the process of determining savings using one of the four IPMVP options.
MCF	An industry standard measure of a gaseous fuel, typically natural gas, having volume of 1,000 cubic feet. (See also, Decatherm)
Operational Cost Avoidance	Often referred to as O&M cost avoidance, this includes the avoided costs of operating and maintaining the facilities, such as, but not limited to, the avoided cost of inside and outside labor to repair and maintain affected systems and equipment, custodial supplies, replacement parts, deferred maintenance, lamp and ballast disposal, and new capital equipment.
Plug Load	Electrical energy-consuming equipment that draws its operating power through cords and wall plugs. (i.e. Office equipment, refrigerators, freezers, vending equipment, radios, TVs, microwave ovens, coffee pots, fans, floor heaters, etc.)
Post-Retrofit Period	Any period of time following commissioning of the ECMs.
Reference Year	A period of time (usually one year) which defines the baseline usage and is representative of the facility's operations, consumption, and usage that is used as the benchmark for determining cost avoidance. This is also referred to as the "Base Year".
Therm	The energy content of a 100 cubic feet volume of a gaseous fuel; sometimes used as a synonymous term for CCF. Technically, however, a therm is the Btu heat content of 100 cubic feet of a gaseous fuel, where the Btu content varies based on source and quality.