

Sachem School District

M&V Report – Year 2



August - 2015



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Overview

Johnson Controls, Inc (JCI). is pleased to provide this comprehensive report of your energy savings and utility rate history. This report was processed using industry standard calculations based on proven and accepted engineering formulas for energy conservation and analysis.

The Project consists of following energy conservation and facility improvement measures (FIM's):

Measured FIM's:

- Lighting – Fixture Retrofit
- Controls – Fixture Controls
- Building Envelope Improvements – Weatherization
- Energy Management System - Optimal Start
- Energy Management System - Demand Ventilation Controller
- Energy Management System - Re-Commission Controls System
- Steam Distribution System - Pipe and Valve Insulation
- Heating System Upgrade - Burner Replacement
- Building Envelope Improvements - Window Films
- Building Envelope Improvements- Wall & Attic Insulation
- Air Handling Unit Upgrade - VFD on Fans
- Computer Management System
- Renewable Energy- Photovoltaic Electric Generation
- Renewable Energy- Wind Power

Contract	18 Years
Term:	
Guarantee	August 2013 to
Period:	July 2031

Non Measured FIM's:

- Domestic Hot Water System - Summer DHW Installation
- Pumping System - VFD on Hot Water Pumps
- Water Valve Controllers
- Vending Machine Controllers
- Pool Covers
- Pool dehumidification
- New Clocks
- Synchronous Belts
- Heat Reclaiming System
- Transformers
- Block Heater Timers
- Waste Oil Heater
- Steam Traps Replacement
- Boiler Controllers

Operational & Maintenance FIM's:

- Lighting – Fixture Retrofit

Explanation of Contract Savings

All of the savings stated in the contract between JCI and Sachem School District come from the energy savings of each Facility Improvement Measure (FIM). There are three types of savings: Measured, Non-Measured (Stipulated), and Operations & Maintenance.

Measured Savings:

Energy savings from facility improvement measures such as (lighting retrofit, Solar PV, Computer Power Management etc) were able to be measured and quantified and account for the Measured Savings. The savings were verified by actual measurements before and after the improvement is made.

Non-Measured Savings:

Energy savings for some of the improvements (ex. pipe insulation, window replacement, steam traps) were not cost-effective to measure, so these were selected to be Non-Measured, or Stipulated Savings. The savings were calculated using industry standard equations and methods to determine conservative estimates, which have been verified through case studies by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE).

Operations & Maintenance Savings:

Savings from the reduced purchase of parts, materials, and labor associated with the improved lighting technology.

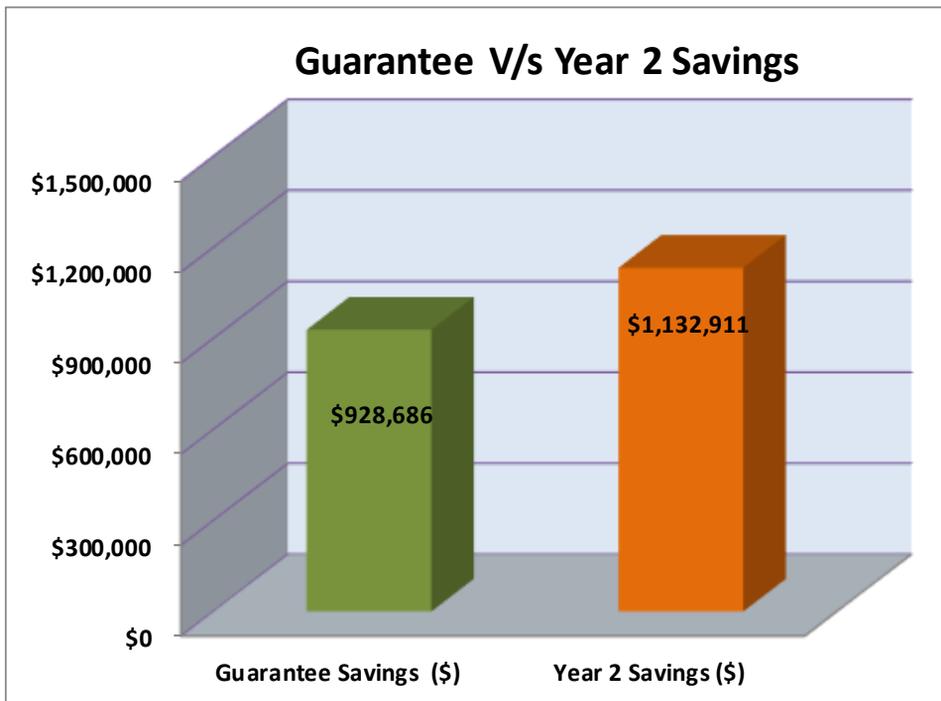
Annual Guaranteed Savings

Sachem School District and JCI. have entered into a Performance Contract. This contract guarantees that Sachem School District will save **\$20,900,834** during the 18 year term of the contract. The Year 2 period of this contract ran from August 2014 through July 2015.

Sachem Central School District					
Guaranteed Savings					
<u>Year of Contract</u>	<u>Measured Cost Avoidance</u>	<u>Non-Measured Cost Avoidance</u>	<u>Operations & Maintenance Cost Avoidance</u>	<u>Energy Rebate Incentives</u>	<u>Total Guaranteed Project Benefits</u>
Implem.	\$0	\$0	\$0	\$155,000	\$155,000
1	\$739,751	\$86,905	\$77,230		\$903,886
2	\$761,944	\$89,512	\$77,230		\$928,686
3	\$784,802	\$92,198	\$77,230		\$954,230
4	\$808,346	\$94,963	\$77,230		\$980,539
5	\$832,597	\$97,812	\$77,230		\$1,007,639
6	\$857,575	\$100,747	\$77,230		\$1,035,552
7	\$883,302	\$103,769	\$77,230		\$1,064,301
8	\$909,801	\$106,882	\$77,230		\$1,093,913
9	\$937,095	\$110,089	\$77,230		\$1,124,414
10	\$965,208	\$113,391	\$77,230		\$1,155,829
11	\$994,164	\$116,793	\$77,230		\$1,188,187
12	\$1,023,989	\$120,297	\$77,230		\$1,221,516
13	\$1,054,709	\$123,906	\$77,230		\$1,255,845
14	\$1,086,350	\$127,623	\$77,230		\$1,291,203
15	\$1,118,940	\$131,452	\$77,230		\$1,327,622
16	\$1,152,509	\$135,395	\$77,230		\$1,365,134
17	\$1,187,084	\$139,457	\$77,230		\$1,403,771
18	\$1,222,696	\$143,641	\$77,230		\$1,443,567
Totals	\$17,320,862	\$2,034,832	\$1,390,140	\$155,000	\$20,900,834

Year 2 Guaranteed Vs Actual Savings

The chart below shows the year 2 guaranteed savings of measured, non-measured and Operation & maintenance savings and actual savings achieved during year 2 which exceeds the guaranteed savings.



Sachem School District

Measured Savings
Year 2: August 2014 - July 2015

JCI incorporated below mention FIM which helped to achieve Energy cost saving. The table below shows the Measured Saving achieved in Year 2.

Measured Savings Summary	
Facility Improvement Measure	Avoided Cost (\$)
Lighting Retrofit	\$377,921
Lighting Controls	\$30,645
Weatherization	\$100,437
Optimal Start	\$46,935
Demand Ventilation Control	\$7,597
Pipe and Valve Insulation	\$9,913
Boiler Replacement	\$18,671
Window Films	\$45,405
Wall & Attic Insulation	\$6,283
VFD on AHU Fans	\$19,818
Computer Management System	\$268,873
Photovoltaic Electric Generation	\$5,061
Wind Power	\$1,674
Re-Commission Controls System	\$26,936
Total Measured Savings	\$966,169

Sachem School District

Non Measured Savings
Year 2: August 2014 - July 2015

The table below shows the Non Measured savings for Year 2 as per Contract

Non Measured Savings Summary	
Facility Improvement Measure	Guarantee Savings (\$)
DHW Installation	\$3,761
VFD on Hot Water Pumps	\$416
Water Valve Controllers	\$3,695
Vending Machine Controllers	\$9,745
Pool Covers	\$10,920
Pool dehumidification	\$20,250
New Clocks	\$2,523
Synchronous Belts	\$11,323
Heat Reclaiming System	\$4,786
Transformers	\$12,028
Block Heater Timers	\$1,947
Waste Oil Heater	\$2,981
Steam Traps Replacement	\$4,402
Boiler Controllers	\$735
Total Non-Measured Savings	\$89,512

Sachem School District

Operational & Maintenance (O & M) Savings Year 2: August 2014 - July 2015

The installation of new energy efficient lamps & ballasts has reduced the districts operational & maintenance cost. The table below shows the operational & maintenance savings achieved in year 2.

Operation & Maintenance Savings Summary	
Facility Improvement Measure	Guarantee Savings (\$)
Lighting - Fixture Retrofit	\$77,230
Total O&M Savings	\$77,230

FIM Calculations

Lighting – Fixture Retrofit Year 2: August 2014 - July 2015

JCI retrofitted the lighting thorough out Sachem School District which has reduced the kWh consumption. The following table shows the dollar savings of **\$377,921** achieved in year 2.

School	Demand Savings (kW)	Electric Savings (kWh)	Thermal Savings (MMBtu)	Total Savings (\$)
Gatelot Avenue School	33	79,732	(75)	\$13,385
Samoset MS	88	231,837	(235)	\$38,036
Sagamore JH	56	117,354	(119)	\$20,152
Hiawatha El	33	77,558	(77)	\$13,402
Chippewa El	32	74,522	(73)	\$13,713
Wenonah El	34	94,649	(92)	\$17,331
Merrimac El	31	66,712	(57)	\$12,577
Cayuga School	31	65,821	(56)	\$11,401
Sachem North HS	155	448,719	(380)	\$73,265
Seneca JH	62	131,862	(13)	\$24,088
Tecumseh El	29	56,861	(49)	\$11,220
Sachem HS East	97	309,251	(262)	\$49,753
Sequoia MS	36	90,377	(77)	\$15,085
Admin Annex/Facilites	2	5,119	(1)	\$1,041
Lynwood Ave El	27	58,154	(50)	\$10,042
Waverly Ave El	33	66,603	(57)	\$11,661
Nokomis El	28	53,528	(46)	\$9,480
Bus Garage	3	7,441	(2)	\$1,433
Tamarac El	33	68,825	(70)	\$11,696
Admin/Union Campus	7	20,398	(23)	\$8,090
Grundy Ave El	32	64,707	(66)	\$11,067
Total		2,190,030	(1,880)	\$377,921

Sachem School District

Lighting – Fixture Control
Year 2: August 2014 - July 2015

JCI installed lighting controls through out the Sachem School District which has reduced the operating hours of the lighting and thus saved 204,511 in kWh. The following table shows the dollar savings of **\$30,645** achieved in year 2.

School	Electric Savings (kWh)	Total Savings (\$)
Gatelot Avenue School	9,121	\$1,355
Samoset MS	19,874	\$2,952
Sagamore JH	13,477	\$2,002
Hiawatha EI	6,324	\$939
Chippewa EI	5,275	\$839
Wenonah EI	6,605	\$981
Merrimac EI	5,061	\$805
Cayuga School	5,419	\$805
Sachem North HS	47,828	\$7,104
Seneca JH	14,154	\$2,102
Tecumseh EI	7,190	\$1,220
Sachem HS East	28,485	\$4,231
Sequoia MS	10,437	\$1,550
Admin Annex/Facilites	191	\$30
Lynwood Ave EI	4,833	\$718
Waverly Ave EI	5,112	\$759
Nokomis EI	5,788	\$860
Tamarac EI	5,501	\$817
Admin/Union Campus	26	\$10
Grundy Ave EI	3,810	\$566
Total	204,511	\$30,645

Sachem School District

Building Envelope Improvements – Weatherization Year 2: August 2014 - July 2015

JCI had installed weather stripping on doors across the district. The building envelope improvement which resulted in savings on both electric and thermal side .The savings for Year2 are **\$100,437**

School	Electric Savings (kWh)	Thermal Savings (MMBtu)	Total Savings (\$)
Gatlot Avenue School	457	142	\$1,846
Samoset MS	1,456	584	\$7,713
Sagamore JH	2,466	801	\$10,394
Hiawatha El	1,902	485	\$6,354
Chippewa El	1,959	393	\$5,190
Wenonah El	2,338	375	\$5,082
Merrimac El	1,633	460	\$6,018
Cayuga School	1,801	394	\$5,242
Sachem North HS	2,475	595	\$8,258
Seneca JH	896	336	\$4,268
Tecumseh El	1,595	440	\$5,779
Sachem HS East	169	87	\$1,179
Sequoia MS	356	198	\$2,742
Admin Annex/Facilites	45	16	\$265
Lynwood Ave El	1,381	414	\$5,388
Waverly Ave El	1,672	462	\$6,032
Nokomis El	1,475	433	\$5,640
Tamarac El	1,560	504	\$7,490
Admin/Union Campus	105	34	\$529
Grundy Ave El	1,879	330	\$5,031
Total	27,620	7,483	\$100,437

Sachem School District

Energy Management System - Optimal Start
Year 2: August 2014 - July 2015

The energy management system upgrade across the district has saved **\$46,935** in year 2.

School	Thermal Savings (MMBtu)	Total Savings (\$)
Gatelot Avenue School	137	\$1,715
Samoset MS	439	\$5,635
Sagamore JH	231	\$2,892
Hiawatha EI	120	\$1,502
Chippewa EI	117	\$1,452
Wenonah EI	140	\$1,767
Merrimac EI	112	\$1,402
Cayuga School	127	\$1,603
Sachem North HS	399	\$5,291
Seneca JH	236	\$2,904
Tecumseh EI	99	\$1,239
Sachem HS East	595	\$7,890
Sequoia MS	239	\$3,246
Lynwood Ave EI	95	\$1,189
Waverly Ave EI	124	\$1,552
Nokomis EI	103	\$1,289
Tamarac EI	124	\$1,786
Grundy Ave EI	179	\$2,578
Total	3,616	\$46,935

Sachem School District

Energy Management System - Demand Ventilation Control
Year 2: August 2014 - July 2015

The demand control ventilation was installed at the following buildings has saved **\$7,597** achieved in year 2.

School	Electric Savings (kWh)	Thermal Savings (MMBtu)	Total Savings (\$)
Sagamore JH	1,413	40	\$711
Sachem North HS	5,007	81	\$1,818
Seneca JH	2,242	38	\$801
Sachem HS East	7,223	129	\$2,784
Sequoia MS	2,772	79	\$1,484
Total	18,657	367	\$7,597

Sachem School District

Energy Management System - Re-Commission Controls System
Year 2: August 2014 - July 2015

The table below shows Re-commission Control System savings achieved in year 2.

School	Electric Savings (kWh)	Thermal Savings (MMBtu)	Total Savings (\$)
Gatelot Avenue School	8,145	28	\$1,632
Samoset MS	8,929	61	\$2,132
Sagamore JH	8,145	40	\$1,794
Hiawatha EI	8,145	11	\$1,414
Chippewa EI	8,145	22	\$1,596
Wenonah EI	8,145	25	\$1,628
Merrimac EI	8,145	22	\$1,591
Cayuga School	8,145	34	\$1,744
Sachem North HS	8,929	61	\$2,158
Seneca JH	21,551	38	\$3,599
Sachem HS East	0	73	\$968
Sequoia MS	0	35	\$475
Lynwood Ave EI	8,145	31	\$1,756
Waverly Ave EI	8,145	19	\$1,471
Nokomis EI	8,145	32	\$1,678
Admin Annex/Facilities	2,254	57	\$1,300
Total	123,113	589	\$26,936

Sachem School District

Steam Distribution System - Pipe and Valve Insulation
Year 2: August 2014 - July 2015

JCI installed insulations on Pipe & Valves which resulted in thermal savings .The table below shows the dollar savings of **\$9,913** in year 2.

School	Thermal Savings (MMBtu)	Total Savings (\$)
Gatlot Avenue School	12	\$150
Samoset MS	80	\$1,027
Sagamore JH	85	\$1,064
Hiawatha EI	9	\$113
Chippewa EI	53	\$658
Wenonah EI	58	\$732
Merrimac EI	27	\$338
Cayuga School	27	\$341
Sachem North HS	70	\$928
Seneca JH	42	\$517
Tecumseh EI	27	\$338
Sachem HS East	31	\$411
Sequoia MS	14	\$190
Admin Annex/Facilites	10	\$161
Lynwood Ave EI	60	\$751
Waverly Ave EI	48	\$601
Nokomis EI	26	\$325
Tamarac EI	40	\$576
Admin/Union Campus	12	\$173
Grundy Ave EI	36	\$518
Total	767	\$9,913

Sachem School District

Heating System Upgrade - Boiler Replacement
Year 2: August 2014 - July 2015

JCI replace boilers at the following buildings which resulted in thermal savings .The table below shows the dollar savings of **\$18,671** in Year 2 .

School	Thermal Savings (MMBtu)	Total Savings (\$)
Sachem North HS	101	\$1,339
Admin Annex/Facilities	38	\$613
Tamarac El	443	\$6,379
Grundy Ave El	718	\$10,340
Total	1300	\$18,671

Sachem School District

Building Envelope Improvements - Window Films
Year 2: August 2014 - July 2015

JCI installed Windows Film which resulted in both electric and thermal savings .The table below shows the dollar savings of **\$45,405** in Year 2..

School	Electric Savings (kWh)	Thermal Savings (MMBtu)	Total Savings (\$)
Gatlot Avenue School	1,354	132	\$1,854
Samoset MS	5,558	428	\$6,320
Sagamore JH	1,863	160	\$2,280
Hiawatha EI	1,785	131	\$1,905
Chippewa EI	1,992	116	\$1,757
Wenonah EI	1,562	135	\$1,936
Merrimac EI	1,079	124	\$1,724
Cayuga School	1,486	124	\$1,786
Sachem North HS	3,417	216	\$3,372
Seneca JH	982	177	\$2,324
Tecumseh EI	1,212	126	\$1,783
Sachem HS East	7,625	290	\$4,978
Sequoia MS	6,524	73	\$1,960
Lynwood Ave EI	3,627	125	\$2,104
Waverly Ave EI	1,630	125	\$1,807
Nokomis EI	1,113	140	\$1,918
Tamarac EI	1,798	157	\$2,528
Grundy Ave EI	2,243	190	\$3,069
Total	46,850	2,969	\$45,405

Sachem School District

Building Envelope Improvements- Wall & Attic Insulation Year 2: August 2014 - July 2015

JCI upgraded the building Envelope Improvements – Wall Insulation which resulted in both electrical and thermal savings .The table below shows the dollar savings of **\$6,283** in Year 2.

School	Electric Savings (kWh)	Thermal Savings (MMBtu)	Total Savings (\$)
Gatelot Avenue School	9,344	391	\$6,283
Total	9,344	391	\$6,283

Air Handling Unit Upgrade - VFD on Fans Year 2: August 2014 - July 2015

JCI installed VFD on AHU fan which resulted in both electrical and thermal savings .The table below shows the dollar savings of **\$19,818** in Year 2.

School	Electric Savings (kWh)	Thermal Savings (MMBtu)	Total Savings (\$)
Samoset MS	102,835	354	\$19,818
Total	102,835	354	\$19,818

Sachem School District

Computer Management System
Year 2: August 2014 - July 2015

JCI installed computer management savings which resulted in electrical savings .The table below shows the dollar savings of \$ **268,873** in year 2.

School	Electric Savings (kWh)	No of Computers	Total Savings (\$)
Gatelot Avenue School	67,063	199	\$9,961
Samoset MS	115,928	344	\$17,218
Sagamore JH	139,855	415	\$20,772
Hiawatha El	66,389	197	\$9,860
Chippewa El	65,715	195	\$10,458
Wenonah El	67,737	201	\$10,061
Merrimac El	60,997	181	\$9,707
Cayuga School	62,008	184	\$9,210
Sachem North HS	247,021	733	\$36,689
Seneca JH	121,657	361	\$18,069
Tecumseh El	61,334	182	\$10,411
Sachem HS East	244,325	725	\$36,289
Sequoia MS	140,192	416	\$20,822
Admin Annex/Facilites	3,370	10	\$536
Lynwood Ave El	60,997	181	\$9,060
Waverly Ave El	67,063	199	\$9,961
Nokomis El	66,389	197	\$9,860
Bus Garage	674	2	\$107
Tamarac El	65,715	195	\$9,760
Admin/Union Campus	3,370	10	\$1,252
Grundy Ave El	59,312	176	\$8,809
Total	1,787,111	5303	\$268,873

Sachem School District

Renewable Energy- Photovoltaic Electric Generation Year 2: August 2014 - July 2015

JCI installed new Solar PV which resulted in electrical savings .The table below shows the dollar savings of **\$5,061** in year 2.

School	Electric Savings (kWh)	Total Savings (\$)
Samoset MS	5,840	\$867
Sagamore JH	5,373	\$798
Sachem North HS	5,906	\$877
Seneca JH	5,607	\$833
Sachem HS East	6,010	\$893
Sequoia MS	5,340	\$793
Total	34,076	\$5,061

Renewable Energy- Wind Power Year 2: August 2014 - July 2015

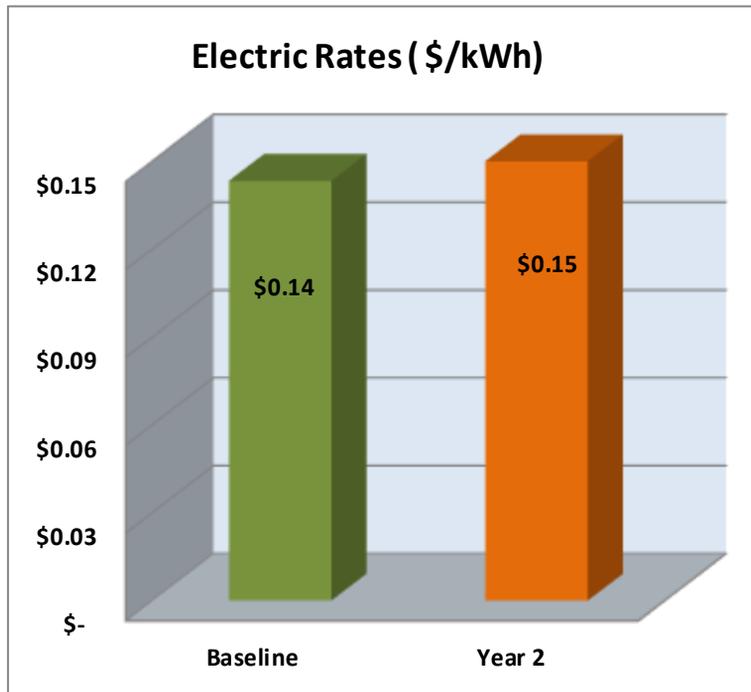
JCI installed Wind Power which resulted in electrical savings .The table below shows the dollar savings of **\$1,674** in Year 2.

School	Electric Savings (kWh)	Total Savings (\$)
Sachem HS East	11,268	\$1,674
Total	11,268	\$1,674

Sachem School District

Electric Rate Comparison

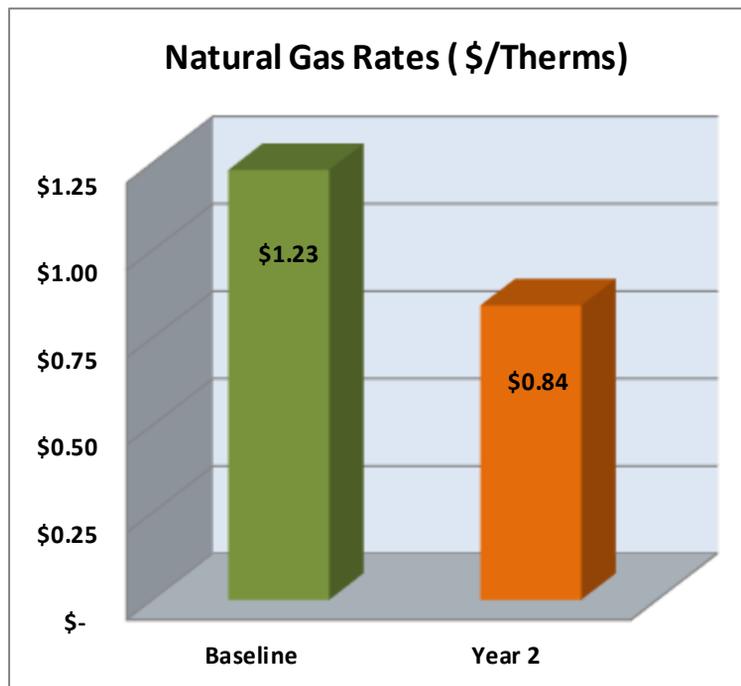
Electric rates have increased slightly over the past years. The average \$/kWh paid by the district in the year (2014-2015) is \$0.15/kWh compared to a contract year average rate of \$0.14 /kWh. This is an increase of 5% from the contract year rates. The following chart shows the average electric rates the district has paid in the Year 2 since the contract.



Sachem School District

Natural Gas Rate Comparison

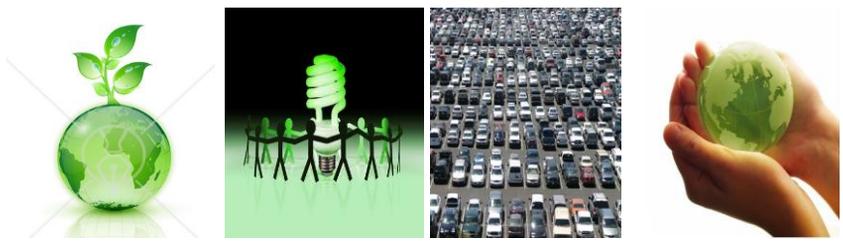
Natural gas rates have decreased over the past few years. The average \$ /therm paid by the district in (2014-2015) was \$0.84 /therm compared to a contract year average rate of \$1.23 /therm. This is a decrease of 32% from the contract year rates. The following chart shows the average natural gas rates the district has paid in the Year 2 since the contract.



Sachem School District

Environmental Impact

Through the energy conservation work with Johnson Controls, the district has made considerable contribution to the reducing of environmental pollution. The below table summarizes the positive environmental impact the district has made during the second year of the contract.

Environmental Impact Sachem Central School District			
Expected Annual Energy Savings:			
Annual Kilowatt Hours Saved	4,555,415	kWh	
Annual Natural Gas Saved	13,348	MMBtu	
Annual Oil Saved	2,608	MMBtu	
Propane Gallons Saved	-	MMBtu	
Emission Reductions	In 1 Year	In 2 Year	In 18 Years
Pounds of Carbon Dioxide	9,602,921	19,205,841	172,852,573
Pounds of Sulfur Dioxide	35,360	70,721	636,487
Pounds of Nitrogen Oxide	13,089	26,179	235,610
Metric Tons of Carbon Dioxide	4,356	8,712	78,405
Metric Tons of Sulfur Dioxide	16.0	32	289
Metric Tons of Nitrogen Oxide	5.9	12	107
			
Equivalent Impact	In 1 Year	In 2 Year	In 18 Years
Passenger Cars off the Road	941	1,882	16,940
Passenger Car Miles Driven	11,293,125	22,586,250	203,276,252
Planted Acres of Trees*	1,310	2,619	23,572
Gallons of Gasoline	496,019	992,037	8,928,335
Barrels of Oil	10,131	20,261	182,353
Number of Powered Homes	557	1,114	10,026

*1 acre of Trees = 400 Trees

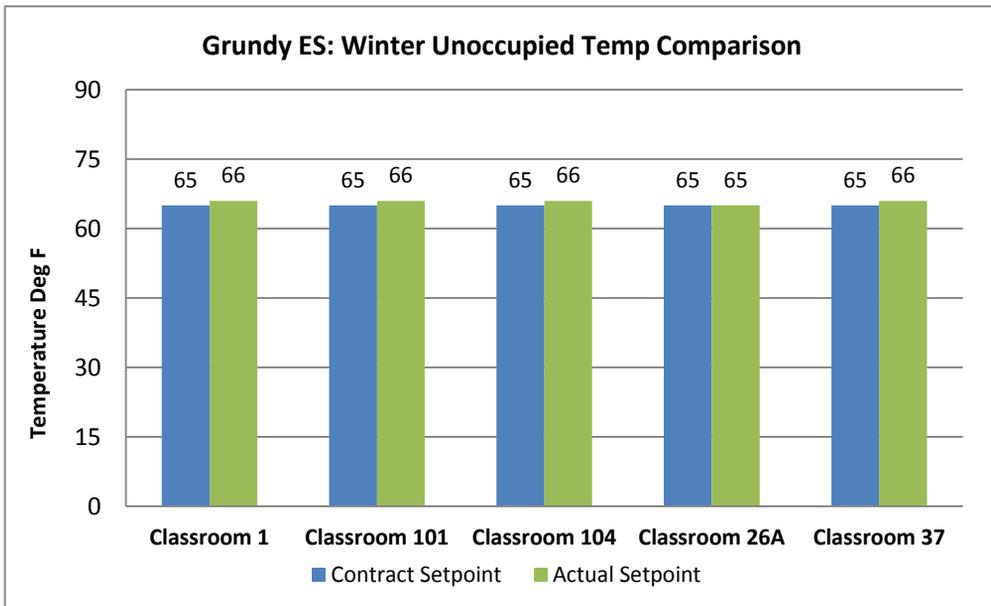
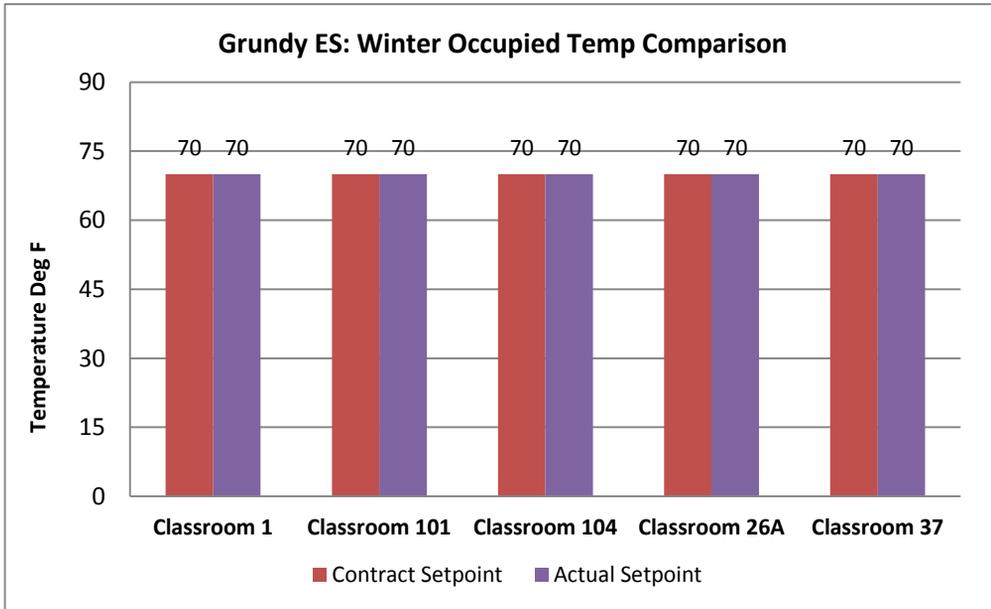
Sachem School District

Glossary

- **Actual cost**
 - Actual energy cost taken directly from utility bills.
- **Actual savings**
 - Savings derived through proven and accepted engineering formulas; baseline less actual costs; positive Actual Savings means utility costs have been reduced after adjusting for weather and other variations in dollars or usage.
- **Annual burn hours (ABH)**
 - The average number of hours the lighting equipment operates in a given year. ABH is typically agreed to be fixed over the term of the contract unless changes in use occur within the building.
- **Baseline**
 - The adjusted pre-retrofit bills (usually one year) used to compare to the post-retrofit usage in order to calculate savings.
- **Blended electric rate (BER)**
 - Total cost of electricity including meter, demand, taxes, delivery, and all other costs divided by the total kWh used for the period.
- **Construction period**
 - The period between the commencement date and the first day of the month following the Substantial Completion Date.
- **Construction savings**
 - Energy Conservation Measures installed during the construction period and being of beneficial use prior to the date of Substantial Completion are monitored to determine savings. Including all utility incentives and rebates.
- **Cost avoidance**
 - Dollars that would have been spent if the energy conservation measures had not been installed.

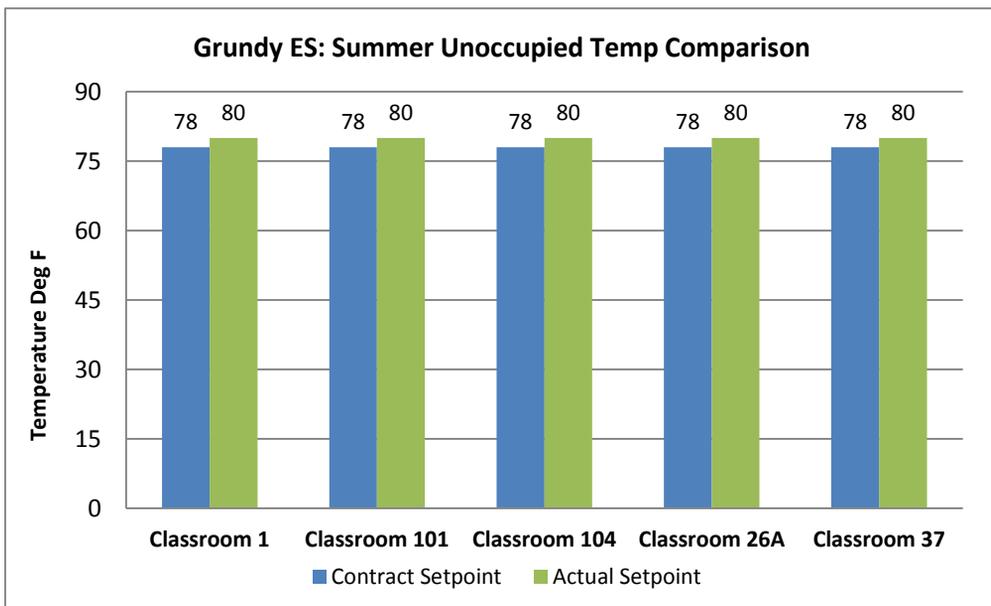
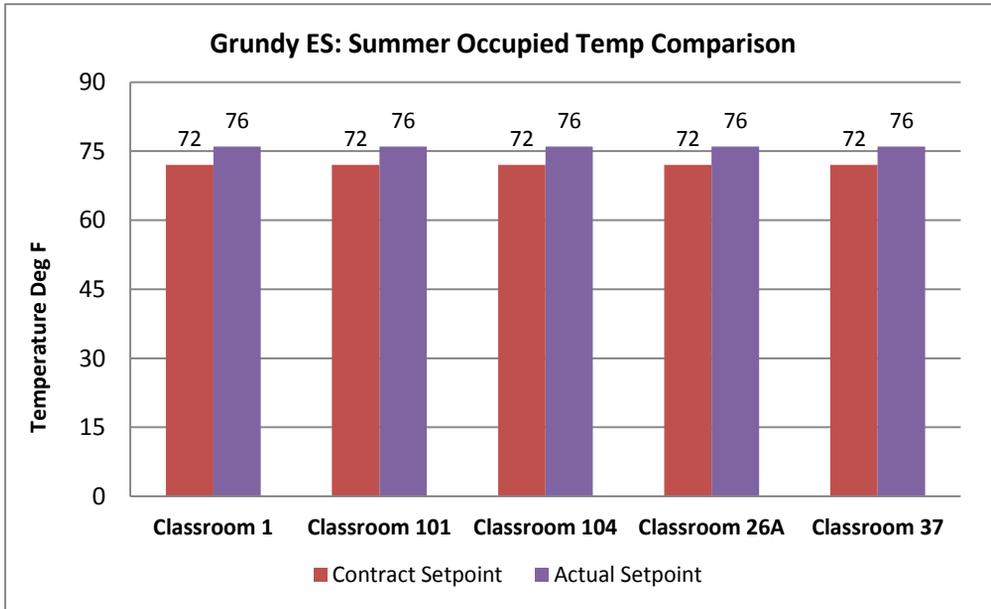
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BMS Trend Analysis: Setpoint Temp



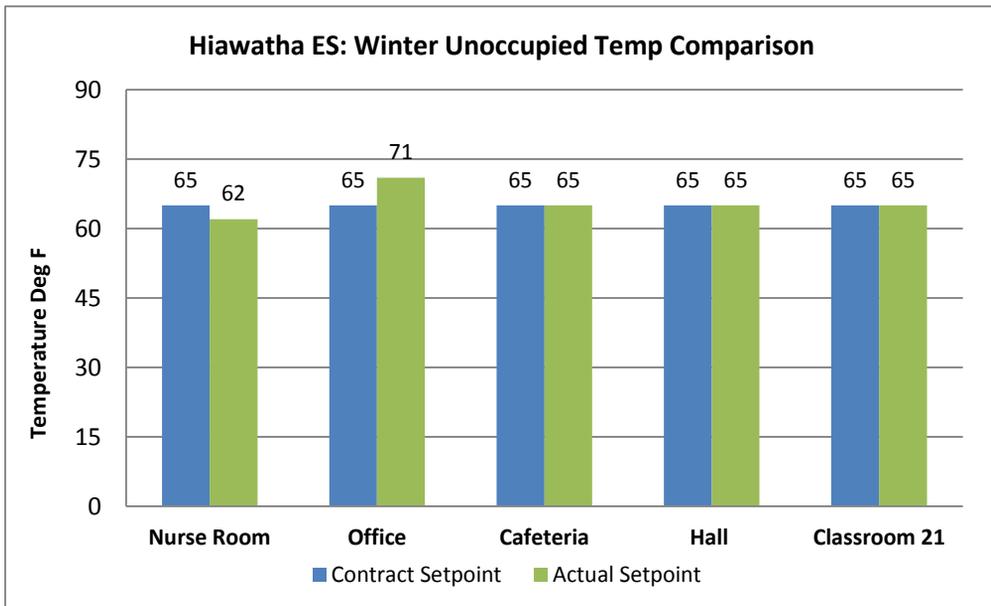
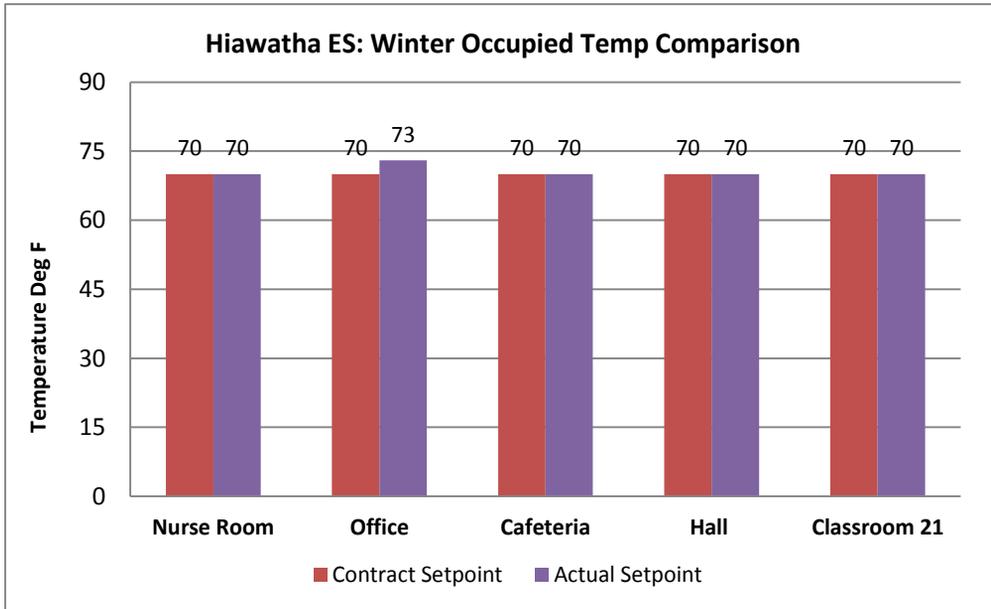
Sachem School District

BMS Trend Analysis: Setpoint Temp



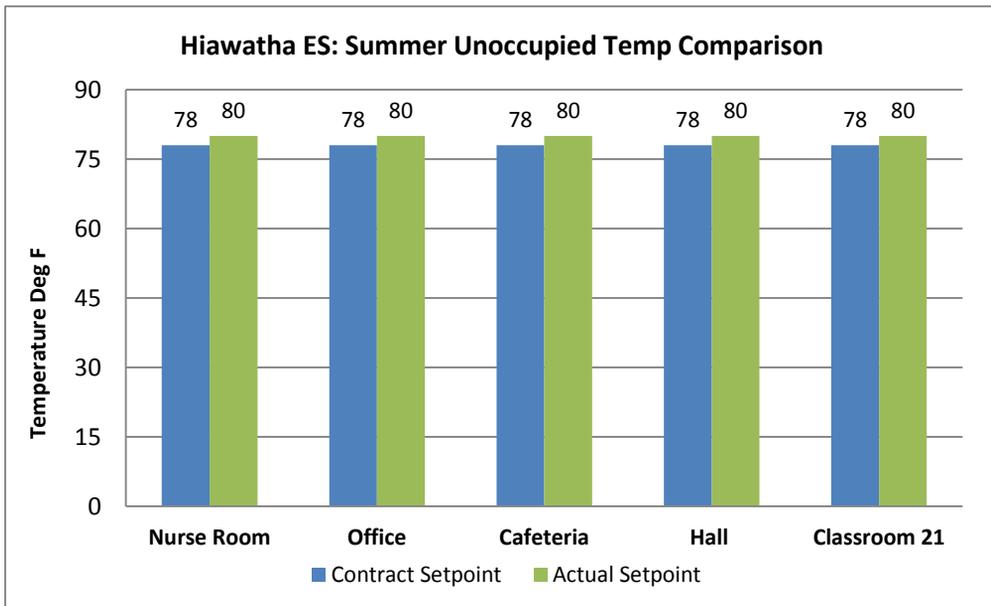
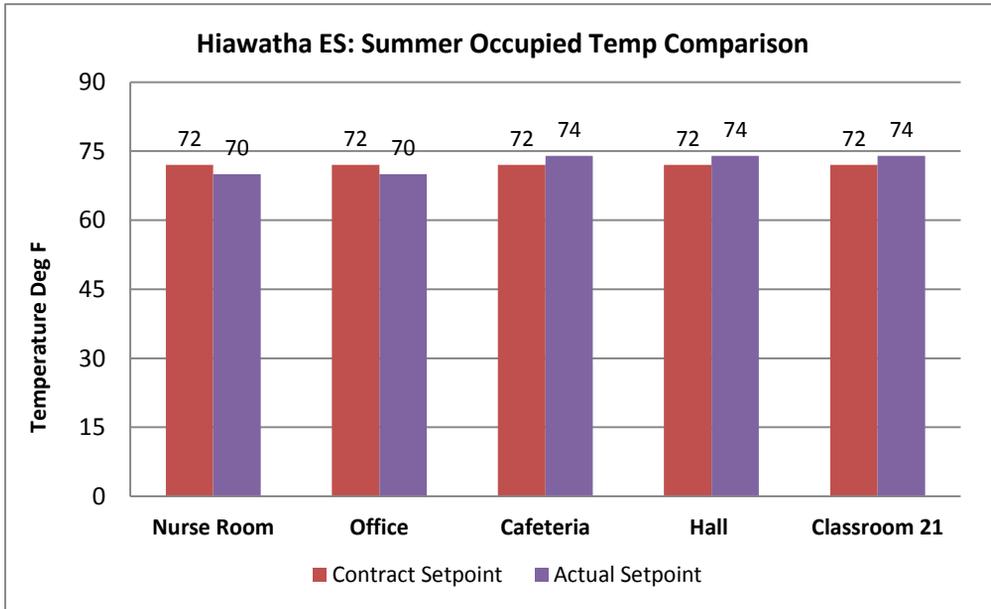
Sachem School District

BMS Trend Analysis: Setpoint Temp



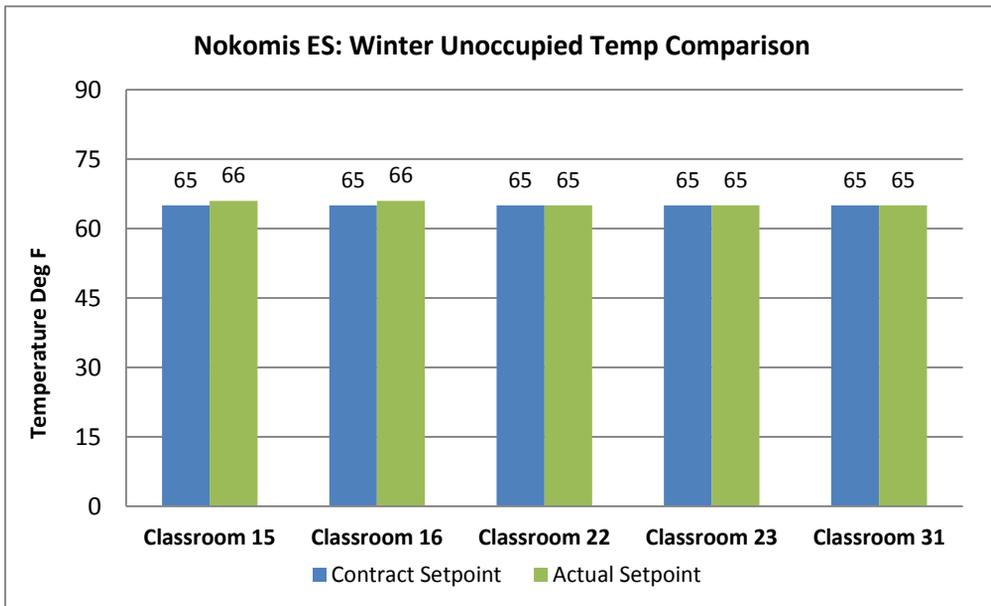
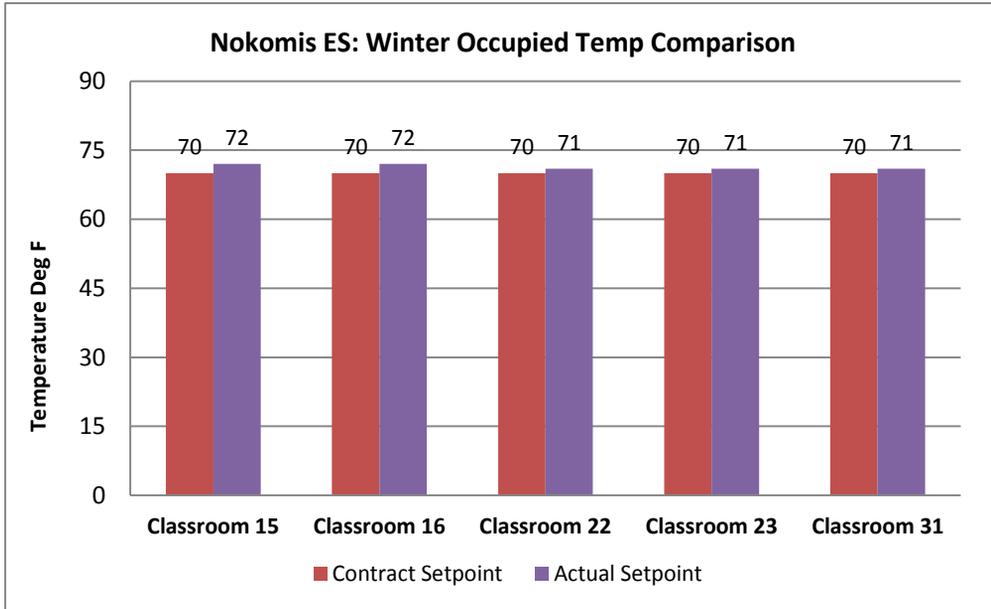
Sachem School District

BMS Trend Analysis: Setpoint Temp



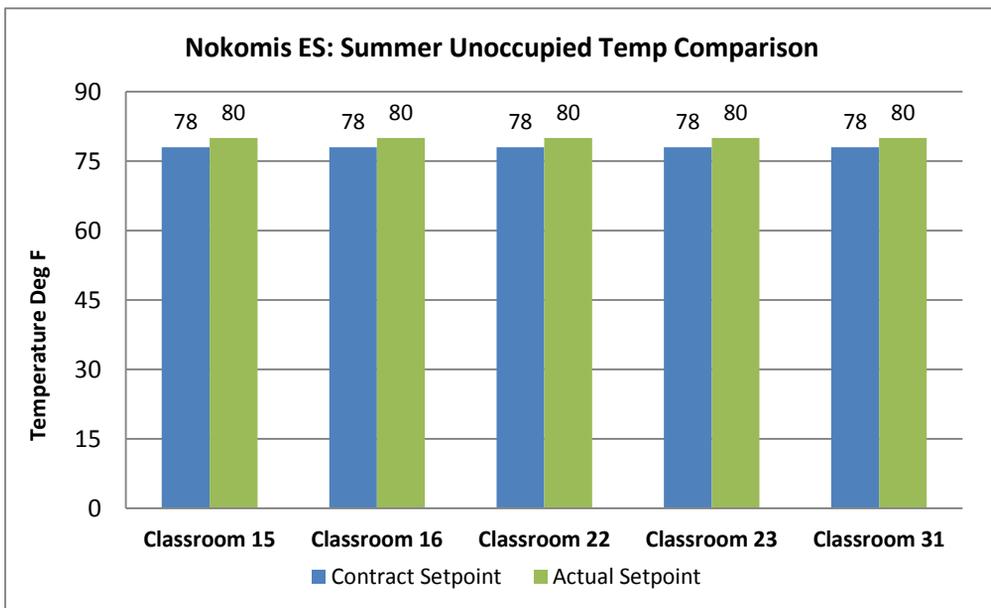
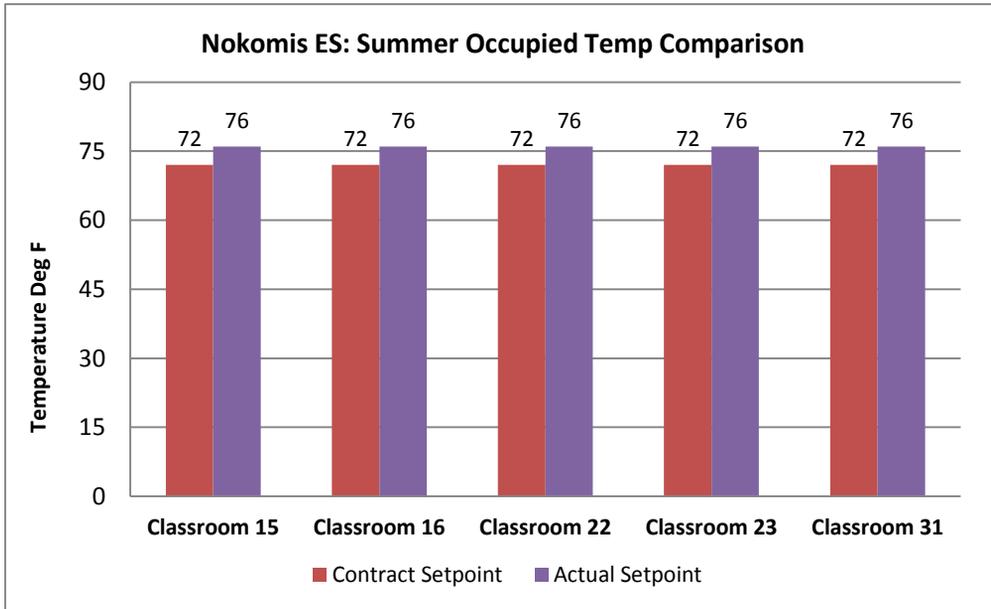
Sachem School District

BMS Trend Analysis: Setpoint Temp



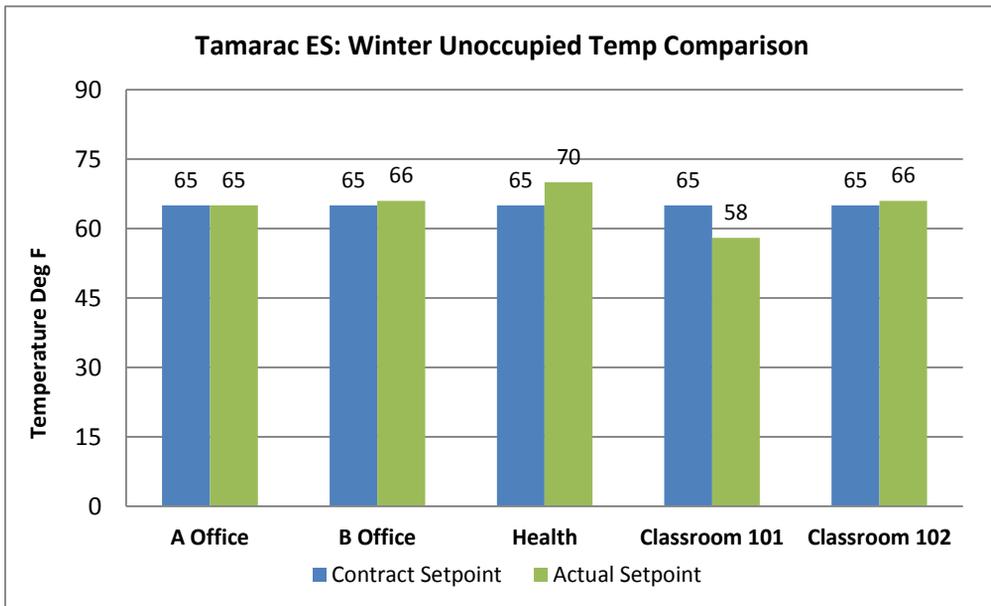
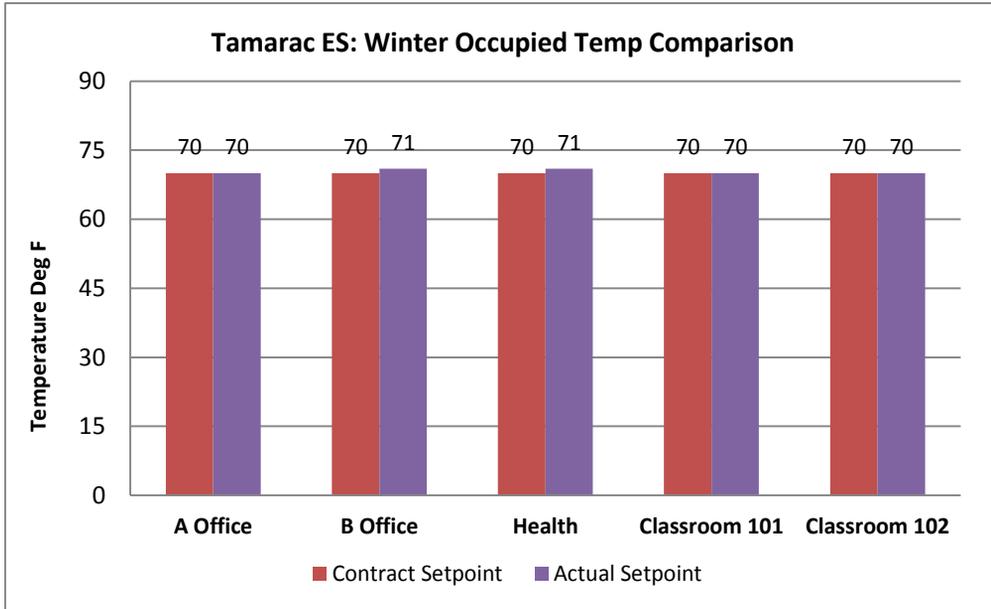
Sachem School District

BMS Trend Analysis: Setpoint Temp



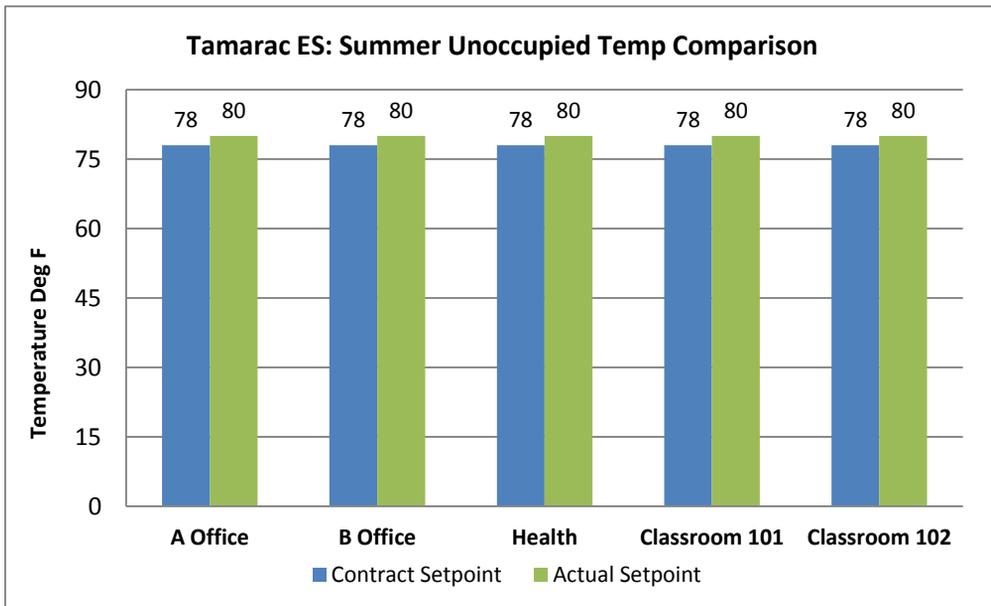
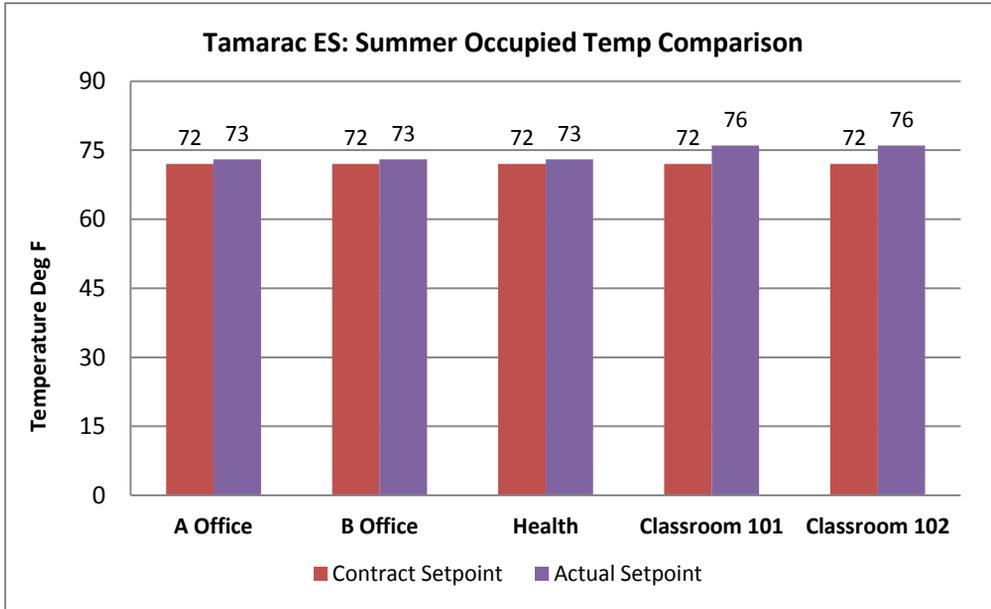
Sachem School District

BMS Trend Analysis: Setpoint Temp



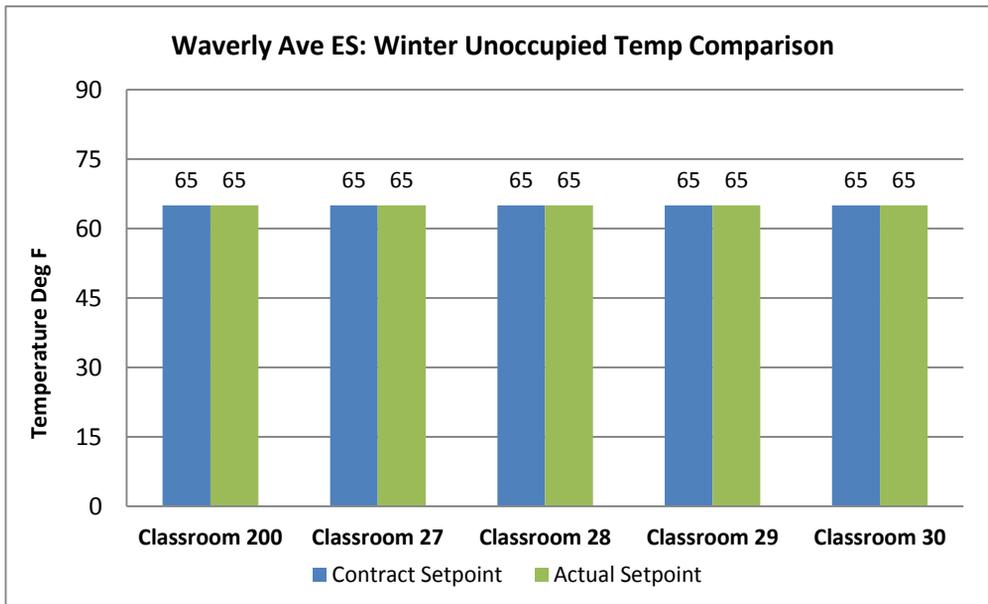
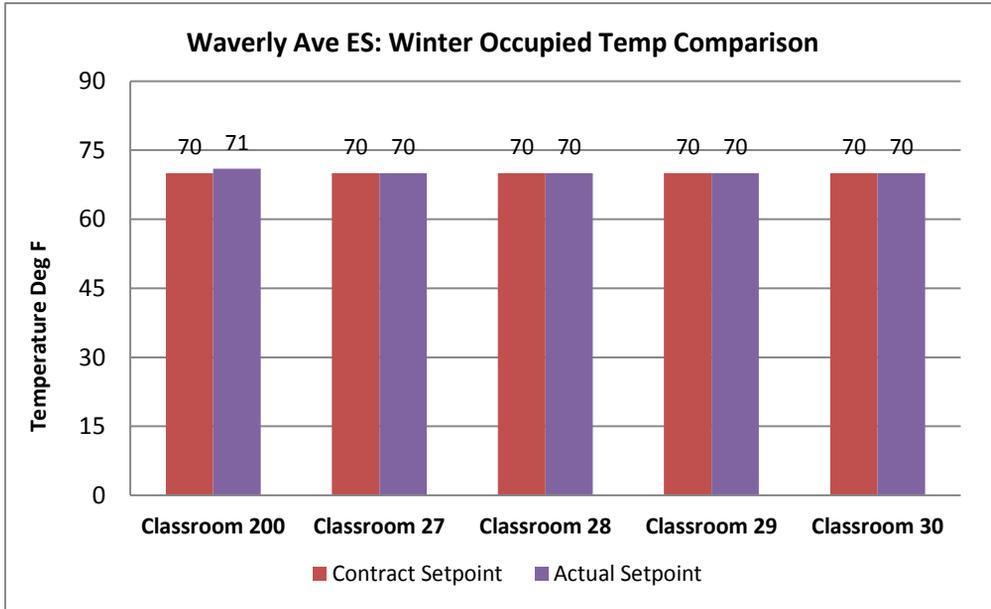
Sachem School District

BMS Trend Analysis: Setpoint Temp



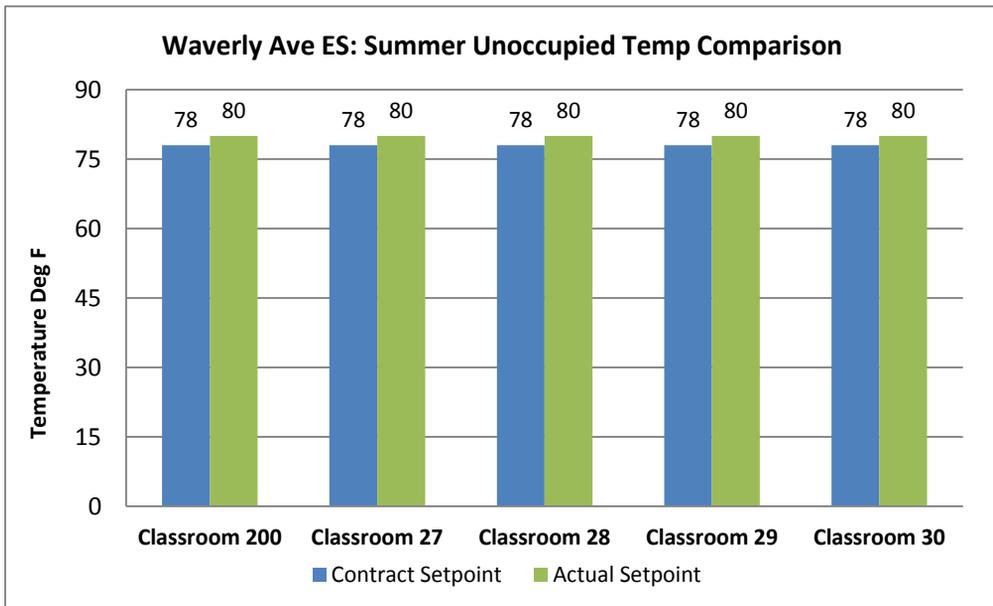
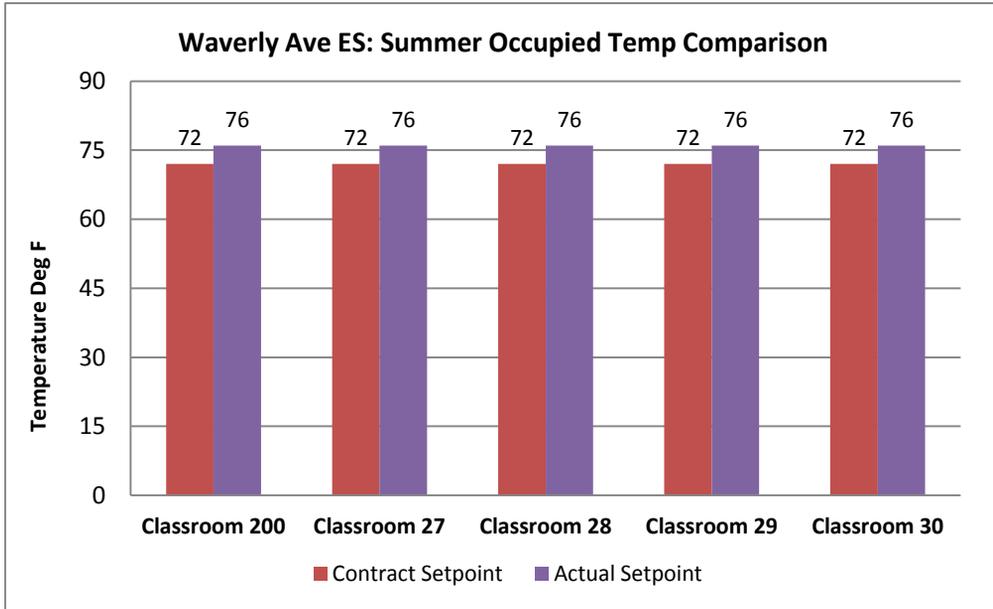
Sachem School District

BMS Trend Analysis: Setpoint Temp



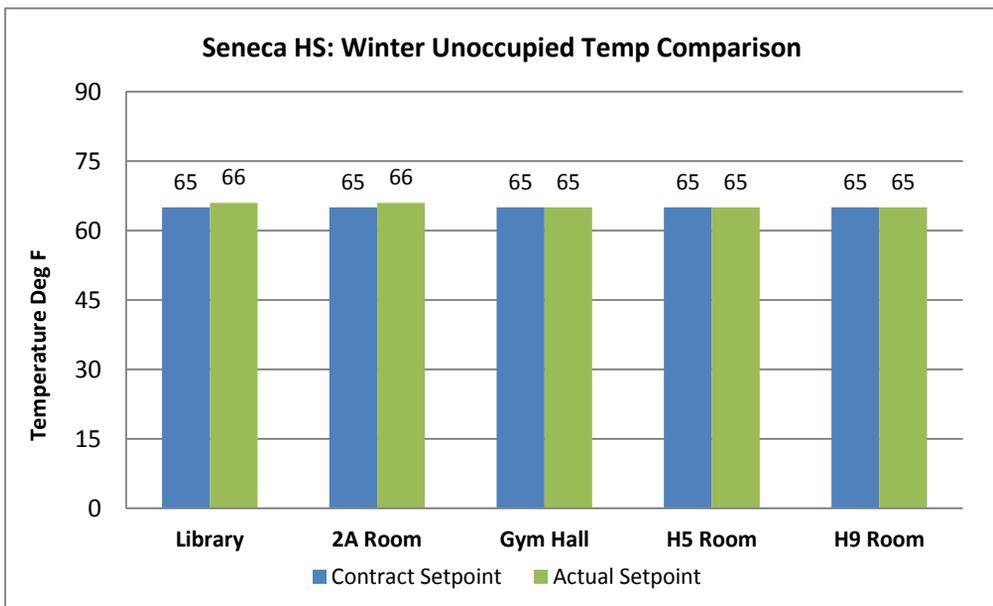
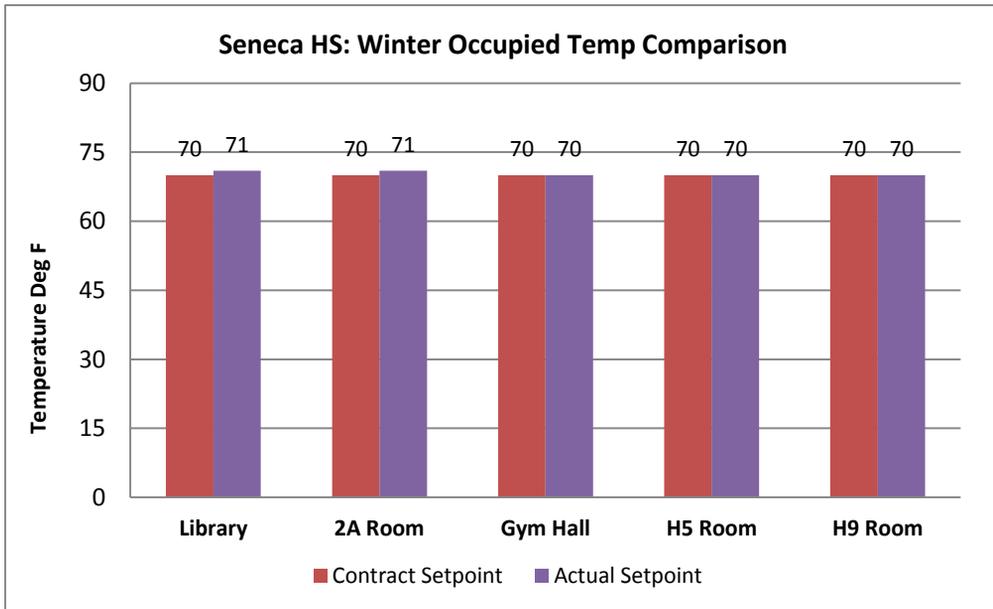
Sachem School District

BMS Trend Analysis: Setpoint Temp



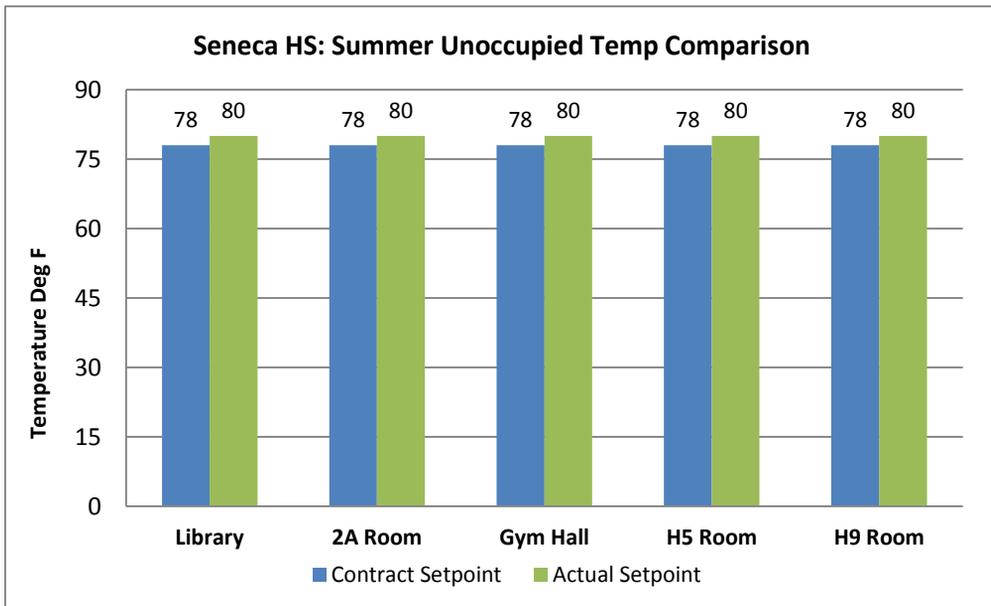
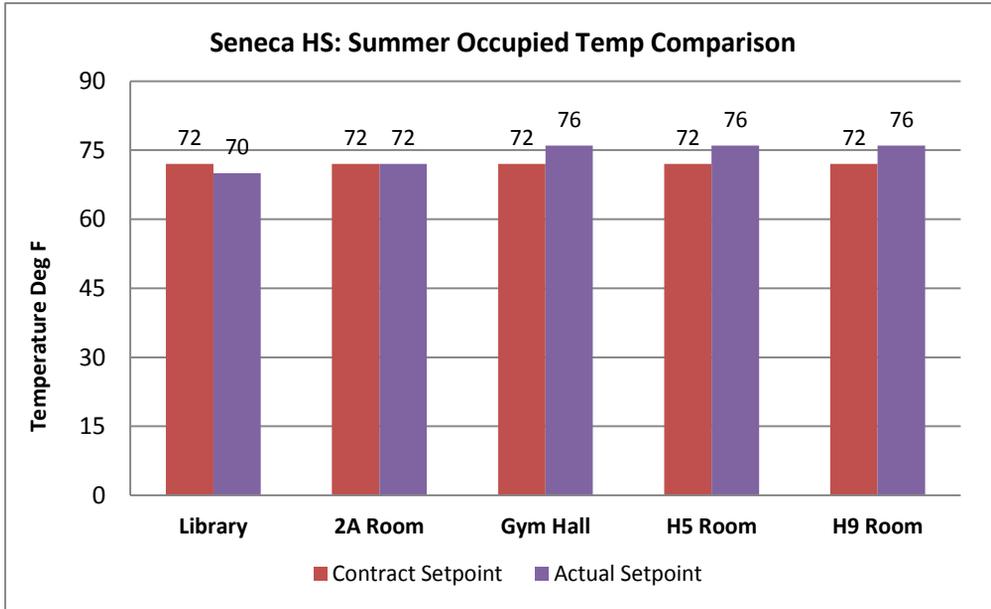
Sachem School District

BMS Trend Analysis: Setpoint Temp



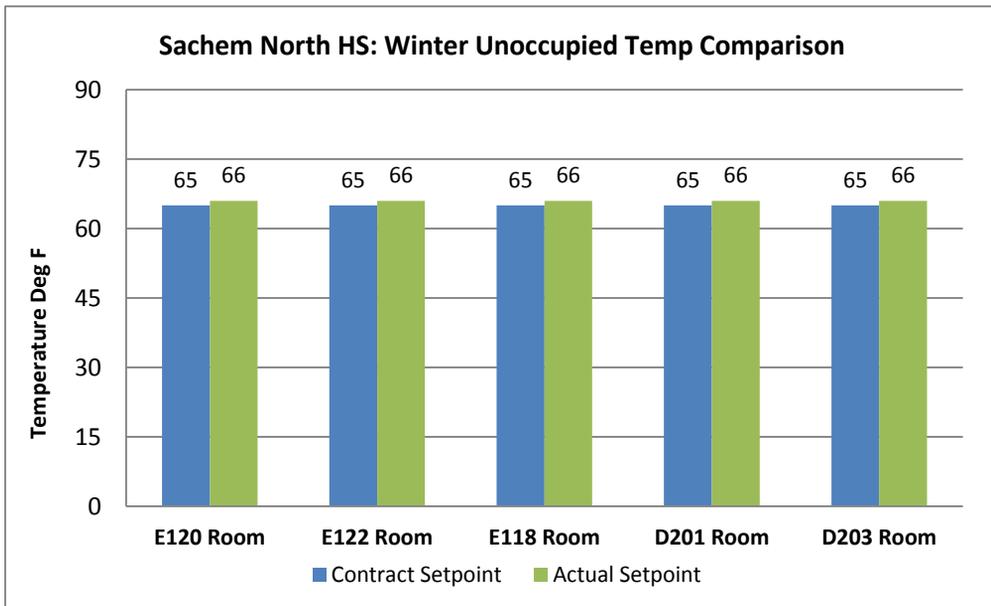
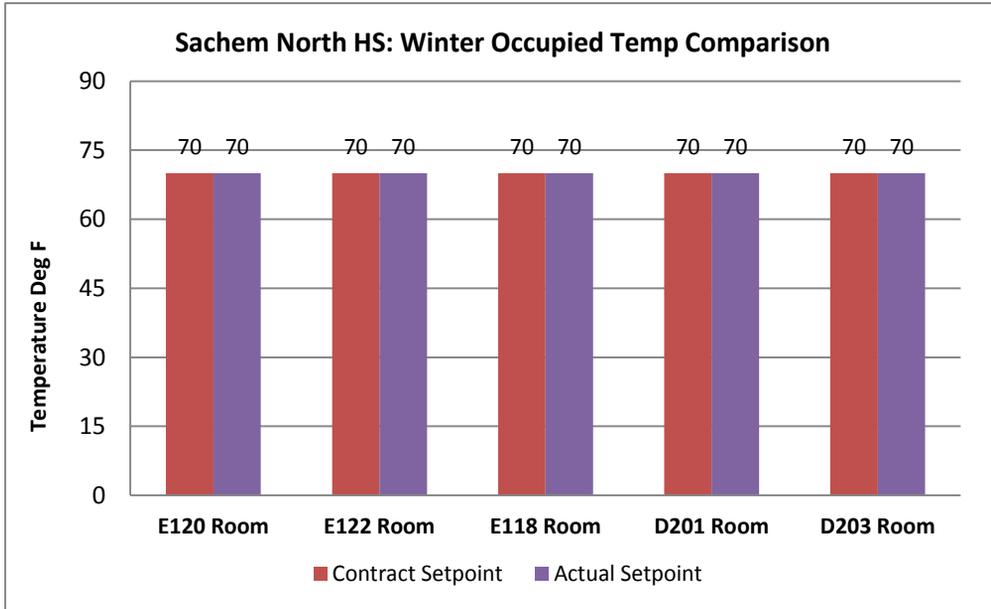
Sachem School District

BMS Trend Analysis: Setpoint Temp



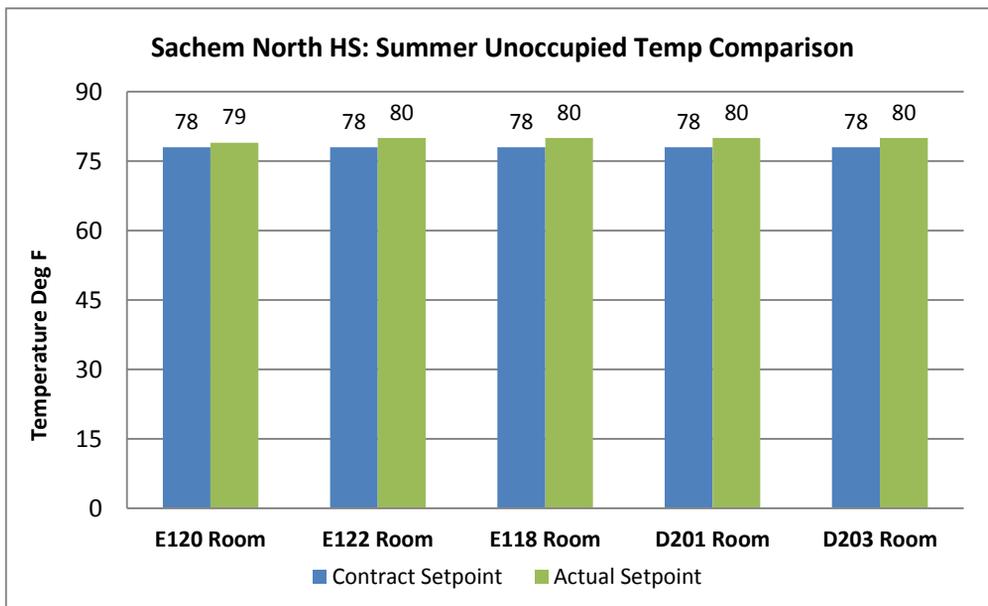
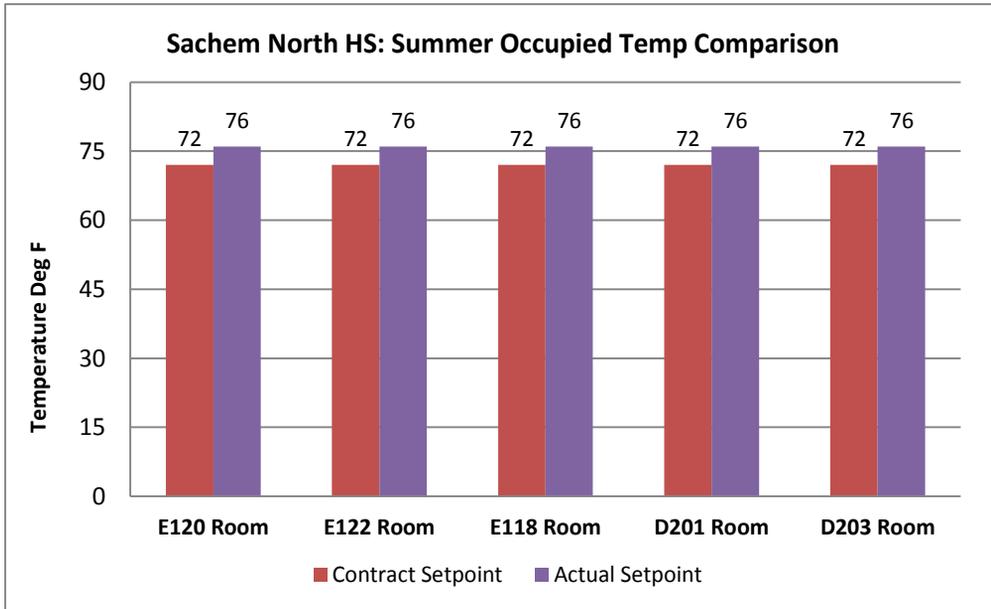
Sachem School District

BMS Trend Analysis: Setpoint Temp



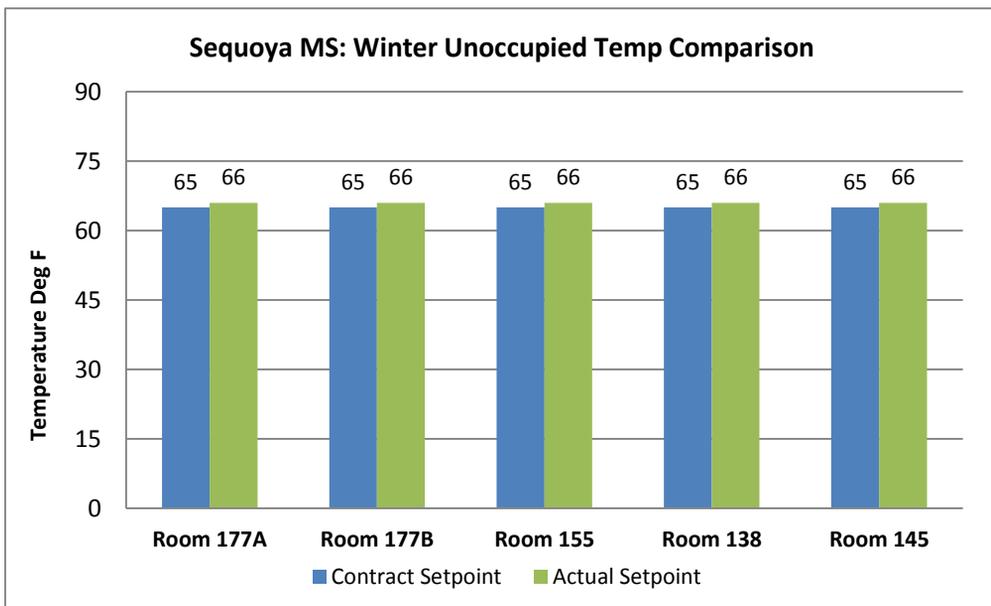
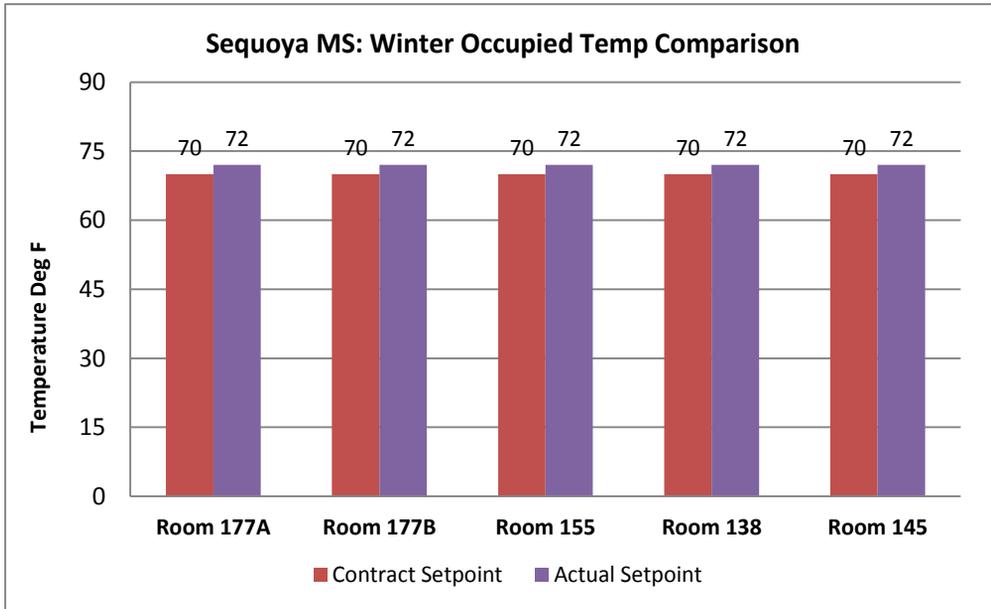
Sachem School District

BMS Trend Analysis: Setpoint Temp



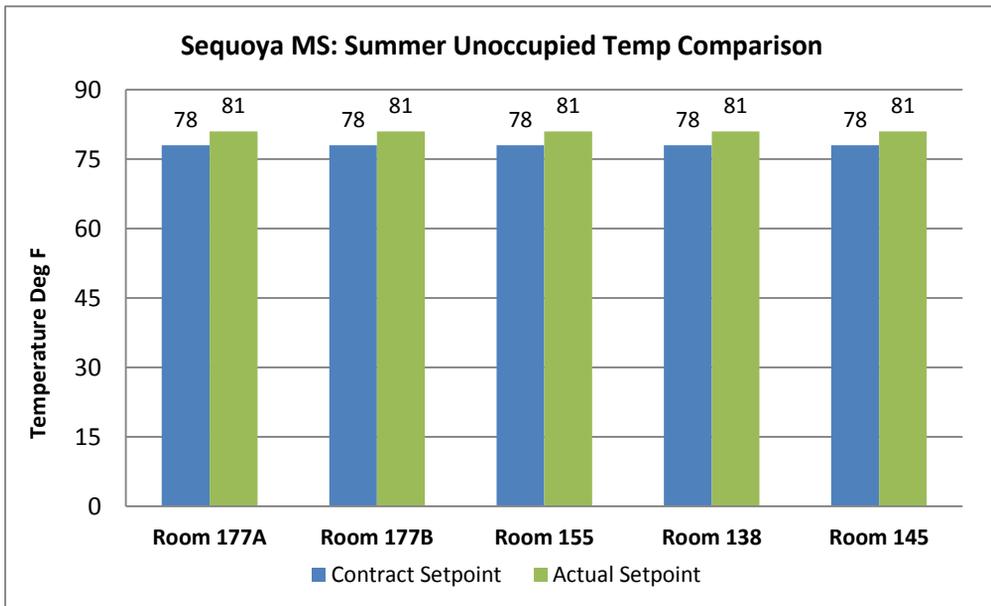
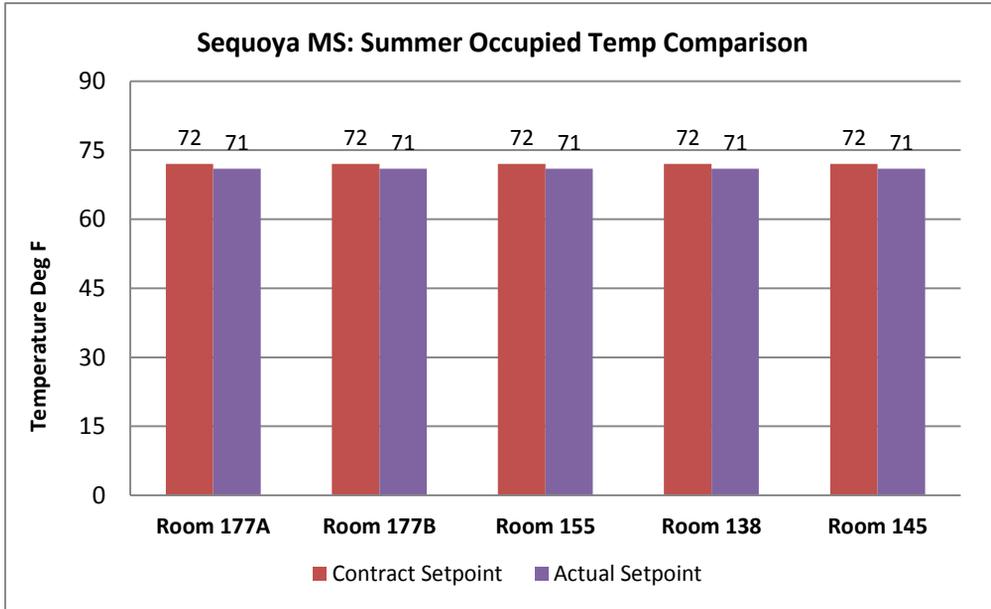
Sachem School District

BMS Trend Analysis: Setpoint Temp



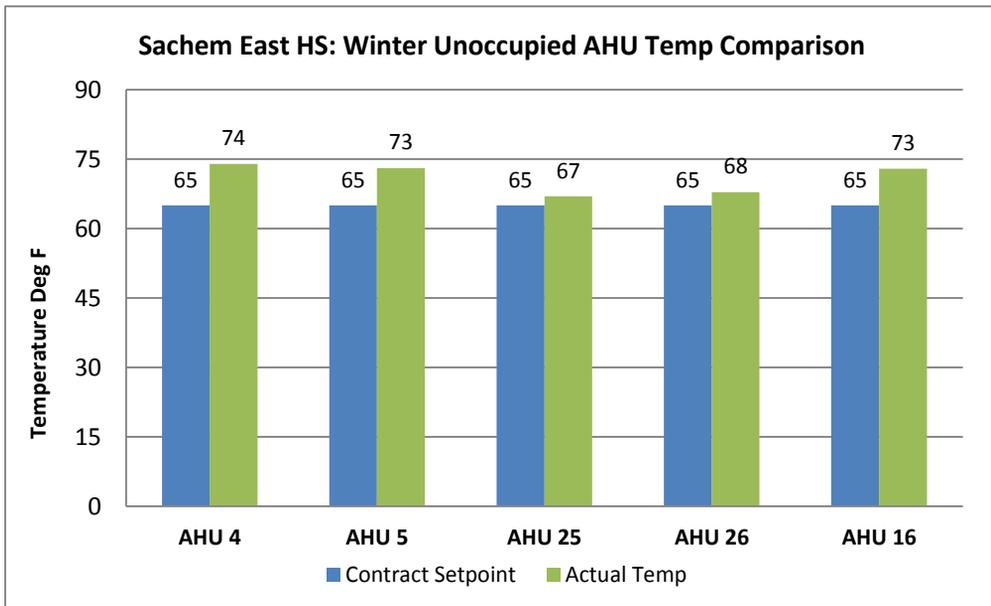
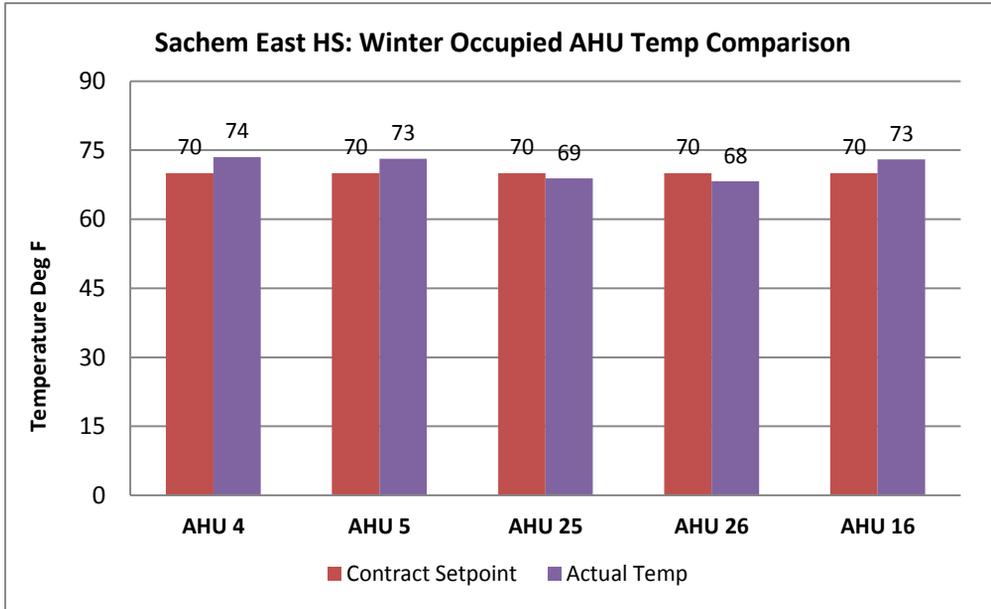
Sachem School District

BMS Trend Analysis: Setpoint Temp



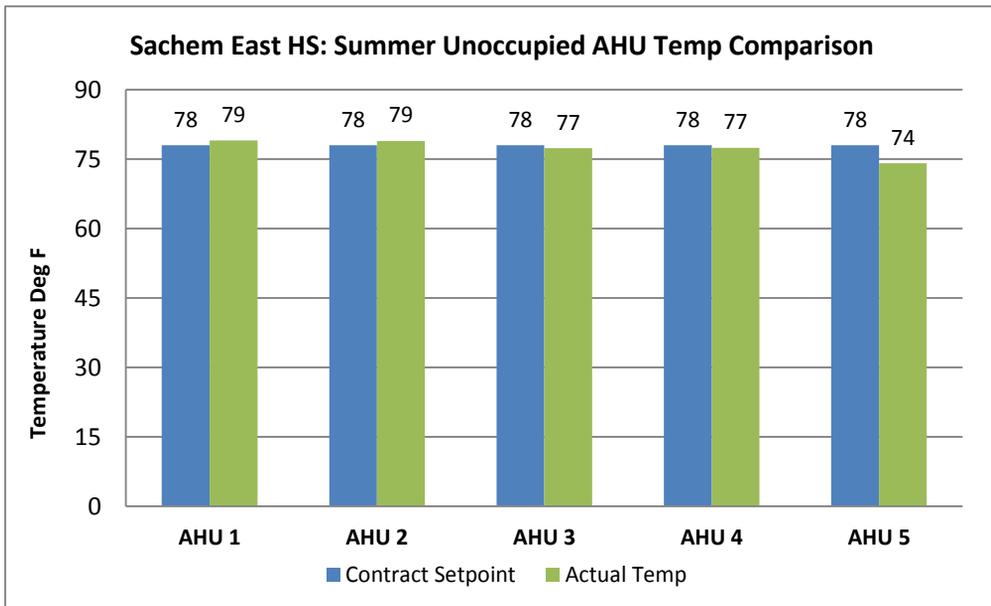
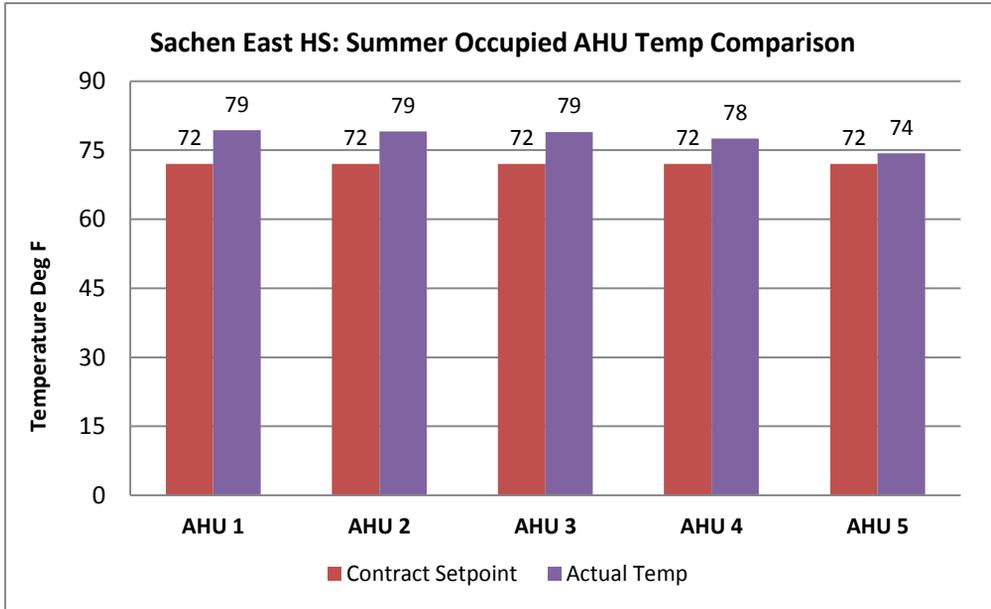
Sachem School District

BMS Trend Analysis: AHU Temp



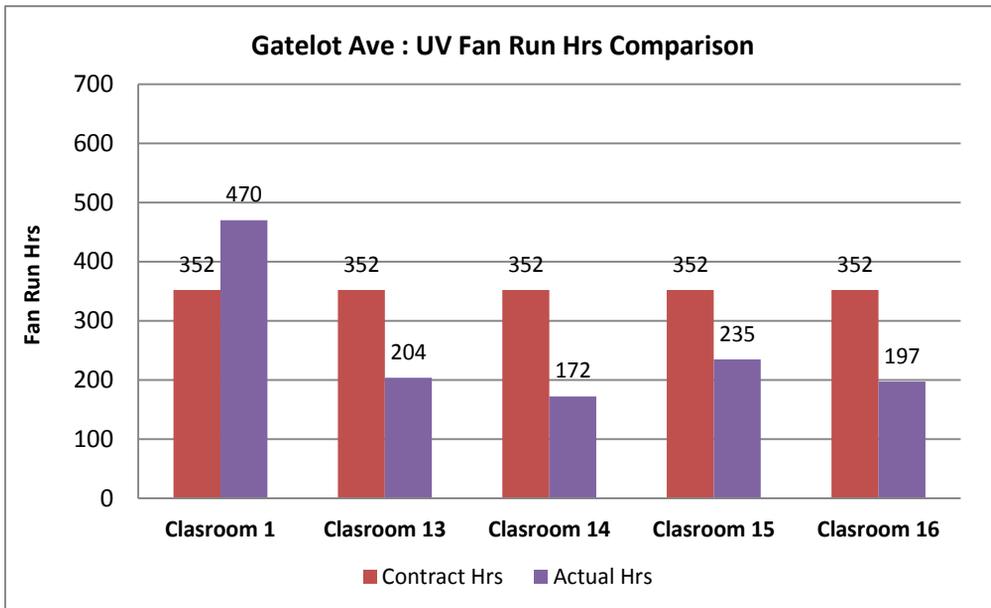
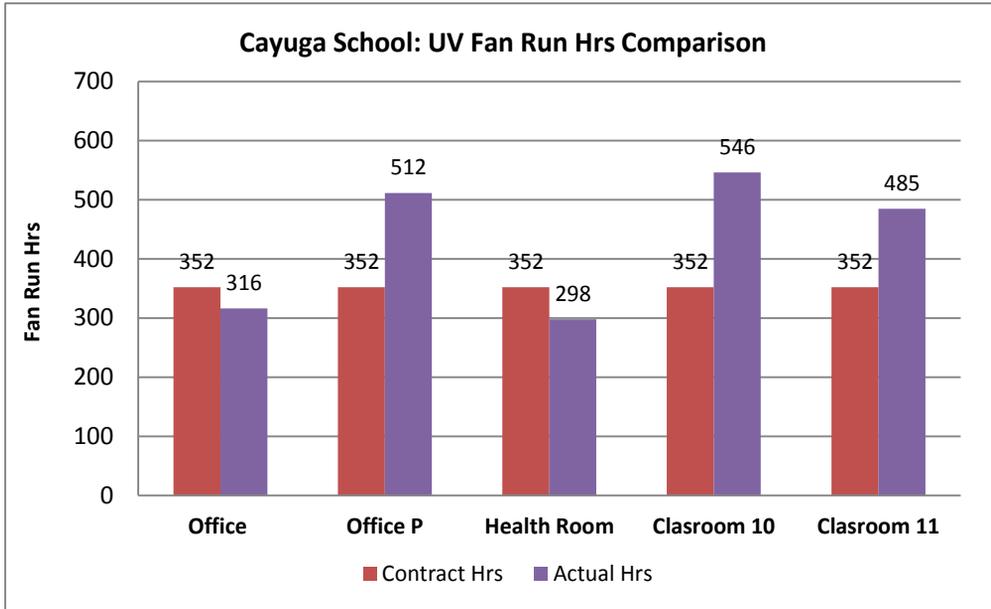
Sachem School District

BMS Trend Analysis: AHU Temp



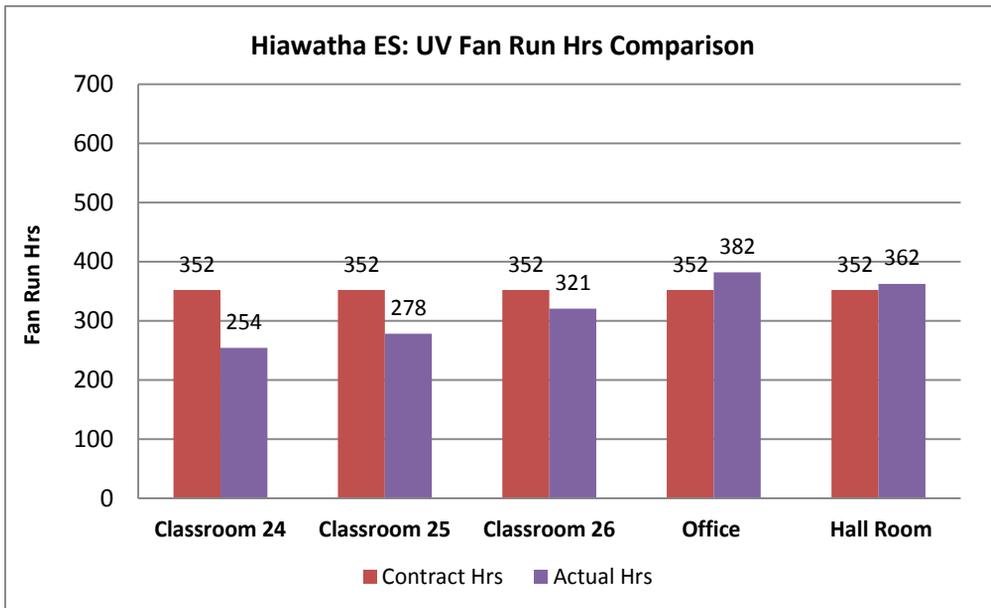
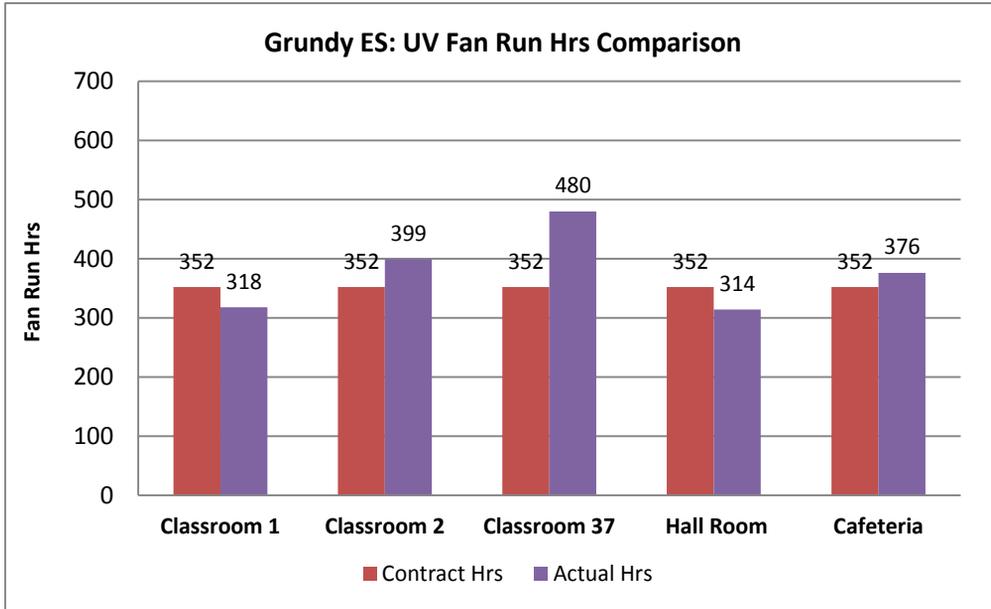
Sachem School District

BMS Trend Analysis: UV Fan Run Hrs.



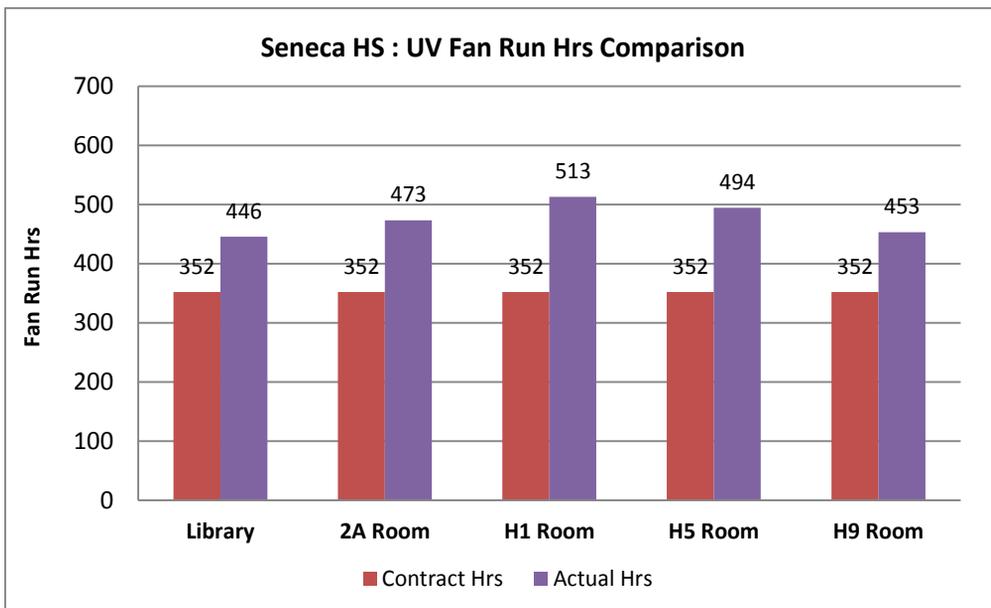
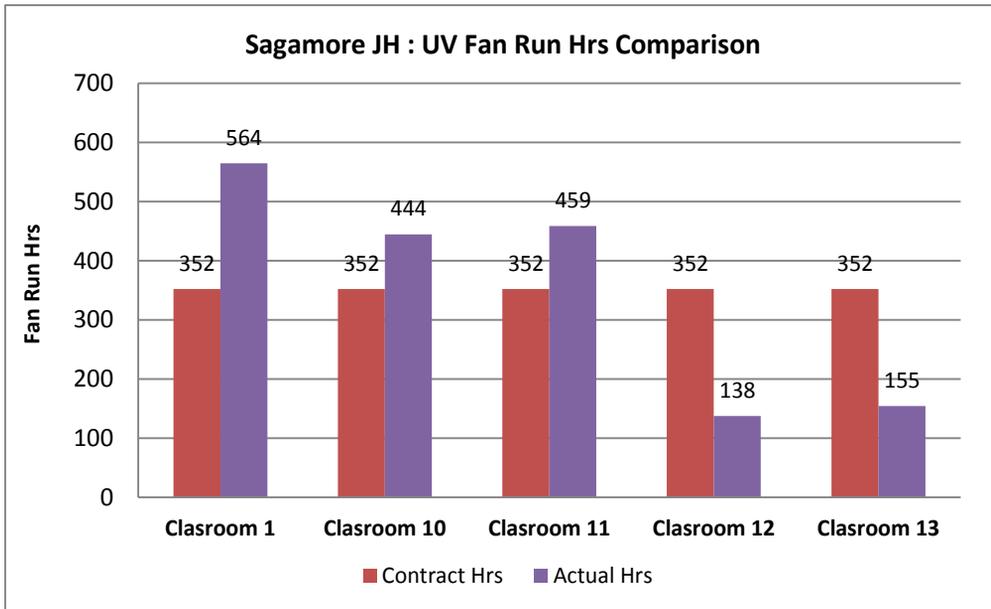
Sachem School District

BMS Trend Analysis: UV Fan Run Hrs.



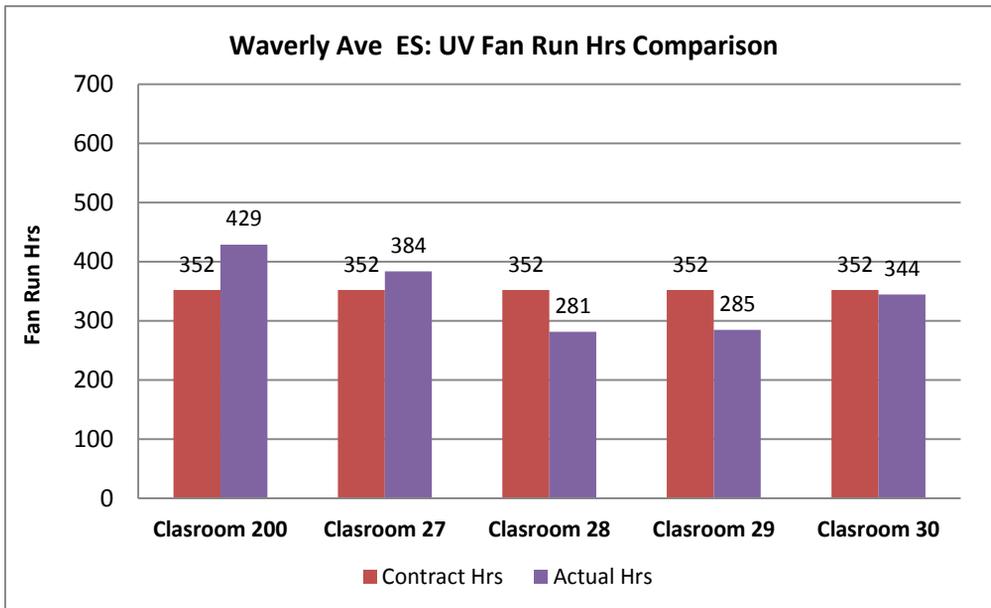
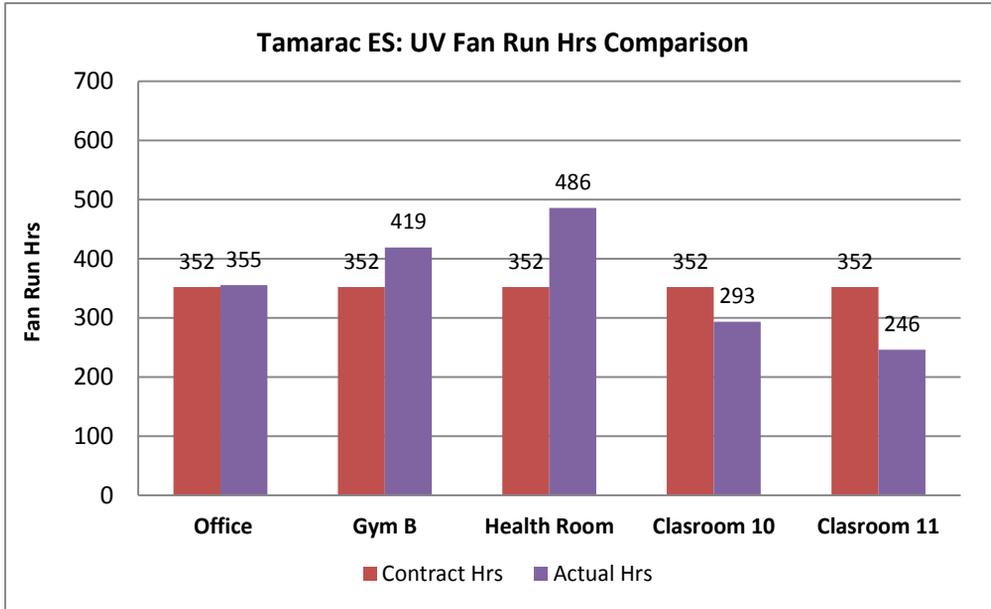
Sachem School District

BMS Trend Analysis: UV Fan Run Hrs.



Sachem School District

BMS Trend Analysis: UV Fan Run Hrs.



Sachem School District

Report Delivery Verification

**Performance Contract Cost Avoidance Savings Report
Year 2 (August 2014 - July 2015)**

This report was produced and presented in accordance with the guarantee documents that are part of the Performance Contract agreement between Johnson Controls, Inc. and Sachem Central Schools District, NY.

Bruce Singer Date
Associate Superintendent for Business
Sachem Schools District, NY

Naimath Mohammed Date
Energy Solutions Performance Engineer
Johnson Controls, Inc.