

RESCUE UNION SCHOOL DISTRICT
 RESCUE, CALIFORNIA

GUARANTEED SAVINGS RECONCILIATION REPORT
 YEAR ONE

Performance Period Dates Covered: November 1, 2015 to October 31, 2016

EXECUTIVE SUMMARY

NORESKO is pleased submit this Guaranteed Savings Reconciliation Report (GSRR) for five Energy Conservation Measures (ECMs) implemented under the Energy Services Agreement (ESA) by and between the Rescue Union School District (RUSD) and NORESKO, LLC, (NORESKO) dated August 13, 2014. This project included work at seven schools in the Rescue Union School District.

TABLE 1-1: FACILITY LIST AND LOCATIONS

Building Name	Address
Rescue Elementary School	3880 Green Valley Rd, Rescue, CA 95672
Jackson Elementary School	2561 Francisco Dr, El Dorado Hills, CA 95762
Lakeview Elementary School	3371 Brittany Way, El Dorado Hills, CA 95762
Lake Forest Elementary School	2240 Salisbury Dr, El Dorado Hills, CA 95762
Green Valley Elementary School	2380 Bass Lake Rd, Rescue, CA 95672
Marina Village Middle School	1901 Francisco Dr, El Dorado Hills, CA 95762
Pleasant Grove Middle School	2540 Green Valley Rd, Rescue, CA 95672

This GSRR provides an overview of the project and its implemented ECMs, including descriptions of changes made since the original contract. It includes verified energy cost savings for the First Guarantee Period based on the Measurement & Verification (M&V) Plan found in *Attachment F* of the ESA, as well as a reconciliation comparing verified savings to the Guaranteed Savings. Guaranteed Savings are the amount of avoided energy and operational costs that NORESKO has guaranteed to RUSD as specified in *Table F.1* of the ESA, Annual Savings Guarantee, and *Table F.4*, Savings Summary. Verified savings are the savings that NORESKO has verified in the First Guarantee Period based on as-built conditions and the annual M&V activities.

The results of this GSRR and associated M&V process indicate the verified savings for the First Guaranteed Period are \$219,860 and exceed the projected savings of \$183,335 by \$36,525 or 20%. The savings in excess of the guarantee are a result of additional lighting fixtures installed during construction, and actual utility rates higher than originally estimated.

The following table identifies the ECMs that were implemented at each facility. Final Project Acceptance was granted on October 30, 2015 and is included as *Attachment OB: Final Project Acceptance*.

TABLE 1-2: ENERGY CONSERVATION MEASURES

ECM No.	ECM Description	Rescue Elementary School	Jackson Elementary School	Lakeview Elementary School	Lake Forest Elementary School	Green Valley Elementary School	Marina Village Middle School	Pleasant Grove Middle School
-1	Interior Lighting System Retrofits	X	X	X	X	X	X	X
-2	Exterior Lighting System Retrofits	X	X	X	X	X	X	X
-3	RTU Outside Air Retro-Commissioning	X		X			X	X
-4	Building Automation System (BAS) Hardware Upgrade							X
-5	Portable Controls Upgrade	X	X		X		X	X

NORESKO completed an on-site inspection of the ECMs on November 9, 2016. This inspection was performed by Nicole Bowling of NORESKO. The following is a brief description of the inspection findings:

ECM 1

Pleasant Grove Middle School

- ▶ Customer noted that there are no emergency fixtures installed in the Locker Rooms and that there are also no windows for ambient light in case of emergency or power failure.

Marina Village Middle School

- ▶ It was noted during the Year One inspection that NORESKO removed the switch on one side of the room and only installed one occupancy sensor at the other entry into the Chemistry Classroom. The door without the switch is the main entry point to the room and it is quite dark at all times. In addition, it was noted that you have to be near the middle of the room in order to activate it.

ECM 2

Lake Forest Elementary School

- ▶ During the Year One inspection, the customer noted that one of the three-headed parking lot fixtures is not working. The Rescue Union facilities team has tried to repair and it still will not work. It is suspected that there is a fray in the line and it has grounded out.

Note: The construction project manager is working with the District to resolve these issues. Overall, the other measures were operating as intended. A summary of the inspections is available in *Attachment 0A: Annual Inspection Report*.

First Guarantee Period – Verified Savings

Table 1-3 lists the Guaranteed Savings in terms of energy units as specified in Table F.1 of Schedule F of the ESA. Dollar savings listed below are calculated based on the Year One energy rates applied to those unit savings. Table 1-4 lists the verified savings per ECM as calculated based on the as-built conditions and the M&V Plan.

TABLE 1-3: GUARANTEED YEAR ONE UTILITY SAVINGS SUMMARY

ECM No.	ECM	Electric Demand (kW)	Electricity (kWh)	Natural Gas/Propane (therms)	Utility Savings (\$)	O&M Savings (\$)	Total Savings (\$)
-1	Interior Lighting System Retrofits	3,074	579,063	(731)	\$123,845	\$6,254	\$130,099
-2	Exterior Lighting System Retrofits	---	296,226	---	\$45,824	\$4,944	\$50,768
-3	RTU Outside Air Retro-Commissioning	---	3,219	---	\$494	\$---	\$494
-4	BAS Hardware Upgrade	---	---	---	\$---	\$---	\$---
-5	Portable Controls Upgrade	(16)	11,376	---	\$1,974	\$---	\$1,974
Total		3,058	889,884	(731)	\$172,137	\$11,198	\$183,335

Numbers across columns or rows may appear to have small discrepancies when summed due to rounding

TABLE 1-4: VERIFIED UTILITY SAVINGS SUMMARY – YEAR ONE

ECM No.	ECM	Electric Demand (kW)	Electricity (kWh)	Natural Gas/Propane (therms)	Utility Savings (\$)	O&M Savings (\$)	Total Savings (\$)
-1	Interior Lighting System Retrofits	3,228	571,415	(741)	\$129,887	\$5,898	\$135,786
-2	Exterior Lighting System Retrofits	---	331,833	---	\$74,991	\$5,363	\$80,355
-3	RTU Outside Air Retro-Commissioning	---	3,219	---	\$665	\$---	\$665
-4	BAS Hardware Upgrade	---	---	---	\$---	\$---	\$---
-5	Portable Controls Upgrade	(16)	11,376	---	\$3,055	\$---	\$3,055
Total		3,212	917,843	(741)	\$208,599	\$11,261	\$219,860

Numbers across columns or rows may appear to have small discrepancies when summed due to rounding

Based on the as-built documentation and results of the M&V process, the verified savings for the First Guaranteed Period are \$219,860 and exceed the projected savings of \$183,335 by \$36,525.

Energy Cost Summary

The utility rates will be escalated each year over the rates in the prior year beginning in the first Performance Year. During each Guarantee Period throughout the performance term these rates will be compared to actual utility rates, and the higher of the calculated floor values or the actual rates in force will be used to determine savings for all ECMs.

The Baseline Energy Rates are increased by the energy escalation factors for each year by the applicable amount shown in **Table 1-5**. The escalated baseline unit energy costs are included below in **Table 1-6**. The actual energy rates are shown in **Table 1-7**, and the Year One Energy rates which are used to calculate the verified savings are shown in **Table 1-8**.

TABLE 1-5: ENERGY ESCALATION FACTORS

Program Year	Fiscal Year	Electricity	Natural Gas	Propane	O&M
Construction	2014	4.1%	9.5%	6.7%	2.4%
One	2015	4.1%	7.8%	6.7%	2.4%
Two	2016	4.1%	7.8%	6.7%	2.4%
Three	2017	2.3%	4.7%	6.7%	2.4%
Four	2018	2.3%	4.7%	6.7%	2.4%
Five	2019	2.3%	4.7%	6.7%	2.4%
Six	2020	2.3%	4.7%	6.7%	2.4%
Seven	2021	2.3%	4.7%	6.7%	2.4%
Eight	2022	2.3%	4.7%	6.7%	2.4%
Nine	2023	2.3%	4.7%	6.7%	2.4%
Ten	2024	2.3%	4.7%	6.7%	2.4%
Eleven	2025	2.3%	4.7%	6.7%	2.4%
Twelve	2026	2.3%	4.7%	6.7%	2.4%
Thirteen	2027	2.3%	4.7%	6.7%	2.4%
Fourteen	2028	2.3%	4.7%	6.7%	2.4%
Fifteen	2029	2.3%	4.7%	6.7%	2.4%

TABLE 1-6: ESCALATED BASELINE ENERGY RATES

Facility	Blended Electricity (\$/kWh)	Natural Gas (\$/therm)	Propane (\$/therm)
Rescue Elementary School	\$0.184	\$---	\$2.471
Jackson Elementary School	\$0.206	\$1.239	\$---
Lakeview Elementary School	\$0.195	\$1.262	\$---
Lake Forest Elementary School	\$0.249	\$1.239	\$---
Green Valley Elementary School	\$0.282	\$---	\$2.744
Marina Village Middle School	\$0.195	\$1.239	\$---
Pleasant Grove Middle School	\$0.184	\$---	\$2.584

TABLE 1-7 ACTUAL ENERGY RATES

Facility	Blended Electricity (\$/kWh)	Natural Gas (\$/therm)	Propane (\$/therm)
Rescue Elementary School	\$0.237		\$0.075
Jackson Elementary School	\$0.234	\$0.322	\$0.069
Lakeview Elementary School	\$0.221	\$1.091	\$0.020
Lake Forest Elementary School	\$0.269	\$1.093	\$0.018
Green Valley Elementary School	\$0.221		\$0.180
Marina Village Middle School	\$0.158	\$1.063	\$0.087
Pleasant Grove Middle School	\$0.199		\$0.180

TABLE 1-8: ENERGY RATES – YEAR ONE

Facility	Blended Electricity (\$/kWh)	Natural Gas (\$/therm)	Propane (\$/therm)
Rescue Elementary School	\$0.237	\$---	\$2.471
Jackson Elementary School	\$0.234	\$1.239	\$---
Lakeview Elementary School	\$0.221	\$1.262	\$---
Lake Forest Elementary School	\$0.269	\$1.239	\$---
Green Valley Elementary School	\$0.282	\$---	\$2.744
Marina Village Middle School	\$0.195	\$1.239	\$---
Pleasant Grove Middle School	\$0.199		\$2.584

DESCRIPTION OF ENERGY CONSERVATION MEASURES

The information below outlines the M&V procedure for each ECM. Each description lays out the procedure for the calculation of savings including the parameters used. If the parameter is not identified in the specific M&V table, then it is assumed that the particular variable is stipulated during the pre- and post-retrofit calculations. Energy calculations are based on, but not limited to, the following variables:

- ▶ Engineering calculations
- ▶ Customer provided operation schedules
- ▶ Manufacturer's published data
- ▶ Field verification of proper equipment operation

ECM-1: INTERIOR LIGHTING SYSTEM RETROFITS & ECM-2: EXTERIOR LIGHTING SYSTEM RETROFITS

NORESOCO utilized Option A for these ECMs.

These ECMs replaced interior and exterior lamps, ballasts, and fixtures with new higher efficiency units and installed controls to minimize lighting operating hours in selected areas where additional controls were determined to be effective. NORESOCO’s M&V approach was based on pre and post wattage tables and validated by a statistical sample of pre-installation wattage measurements.

NORESOCO created a spreadsheet load model using the utility bills, lighting system measurements, operating hours, and other pertinent information to determine the efficiency of the existing light systems in use by each school. These models were used to establish the baseline energy consumption data.

To calculate the proposed direct energy savings, fixtures were grouped by baseline lamp and ballast combination (LBC), post-installation LBC, and hours of operation. Energy savings calculations for these ECMs used data from the following sources:

- ▶ On-site audits of each school
- ▶ Electricity consumption of existing fixtures
- ▶ Industry standard lighting wattage tables showing standard consumption of the major Lighting-Ballast Combinations (LBCs)
- ▶ Data provided by facility personnel (occupancy hours, operating hours of equipment)

Key parameters that affected baseline energy use included lamp, ballast and fixture energy consumption, and operating hours. Building operating and occupant data was provided by RUSD staff. If any of these parameters could not be determined from these sources, NORESOCO estimated the parameter based on standard engineering practices and experience.

For each line item in the inventory, the verified electric demand and energy savings were calculated using the following equations:

$$ES_{LTG} = \{(P_{base} * N_{base}) - (P_{post} * N_{post})\} * H_{base}$$

Where:

- ES_{LTG} = Annual Energy Savings (kWh)
- P_{BASE} = Baseline Electrical Power (kW/fixture)
- N_{BASE} = Baseline Fixture Quantity
- P_{POST} = Post-installation Electrical Power (kW/fixture)
- N_{POST} = Post-installation Fixture Quantity
- H_{BASE} = Baseline Annual Operating Hours

$$DS_{LTG} = \{(FW_{base} * N_{base}) - (FW_{post} * N_{post})\} * DF_{LTG}$$

Where:

- DS_{LTG} = Monthly demand savings in kW for the lighting retrofit
- P_{BASE} = Baseline Electrical Power (kW/fixture)
- N_{BASE} = Baseline Fixture Quantity
- P_{POST} = Post-installation Electrical Power (kW/fixture)

N_{POST} = Post-installation Fixture Quantity
 DF_{LTG} = Hours group diversity factor.

Annual hours of operation are the values shown for each entry in the comprehensive lighting audit and spreadsheet model. The total verified electric energy and demand savings are the sum of the energy and demand savings for each line item in the inventory.

To calculate the proposed lighting control savings, fixtures were grouped with other fixtures sharing the same baseline LBC group, post-installation LBC group, and hours of operation.

For each group of fixtures, NORESKO calculated the electric energy savings from the new controls as follows:

$$ES_{CONTROLS} = \left\{ (P_{post} * H_{base}) - (P_{post} * H_{post}) \right\} * N_{post}$$

Where:

$ES_{controls}$ = Energy savings, in kWh, for the on/off controls.
 P_{post} = Electrical power, in kW, per fixture for appropriate post-installation LBC group.
 H_{base} = Baseline annual operating hours defined by fixture's pre-hours group.
 H_{post} = Post-Installation annual operating hours defined by fixture's post hours group.
 N_{post} = Number of fixtures in representative post-installation LBC group.

For each group of fixtures, NORESKO calculated the electric demand savings from the new controls as follows:

$$DS_{CONTROLS} = P_{post} * DF_{controls} * N_{post}$$

Where:

$DS_{controls}$ = Monthly demand savings (in kW) for the lighting controls.
 P_{post} = Electrical power, in kW, per fixture for appropriate post LBC group.
 $DF_{controls}$ = Hours group diversity factor.
 N_{post} = Number of fixtures in representative post-installation LBC group.

The associated interactive heating and cooling effects on electric demand, electric consumption, and natural gas and propane usage were calculated using the following equations:

$$\begin{aligned}
 DS_{CLG} &= DS_{LTG} \times LCC \times SC / COP \\
 ES_{CLG} &= ES_{LTG} \times LCC / (COP \times SC) \times WC / 52 \\
 P_{HTG} &= (ES_{LTG} \times PS \times LCH \times SH \times WH / 52 \times HFCF) / EFF_{HTG}
 \end{aligned}$$

Where:

DS_{CLG} = Annual Interactive Cooling Demand Savings (kW)
 ES_{CLG} = Annual Interactive Cooling Energy Savings (kWh)
 P_{HTG} = Annual Interactive Heating Penalty
 LCC = Lighting Contribution to Cooling Load, as a percentage of total lighting energy use
 SC = Space Cooled, as a percentage of the total floor space
 COP = Cooling System Efficiency (COP)
 WC = Weeks of Cooling per year
 PS = Perimeter Spaces, as a percentage of the total floor space
 LCH = Lighting Contribution to Heating Load, as a percentage of total lighting energy use.
 SH = Space Heated, as a percentage of the total floor space
 WH = Weeks per year Heating
 $HFCF$ = Heating Fuel Conversion Factor

$$\begin{aligned}
 &= 0.03412 \text{ Therms per kWh for Natural Gas} \\
 &= 1.0 \text{ kWh per kWh for Electricity} \\
 EFF_{HTG} &= \text{Heating System Efficiency}
 \end{aligned}$$

Lighting O&M savings were calculated using the number of replacement fixtures, fixture operating hours, and maintenance intervals of existing and new fixtures.

Baseline M&V Activities

NORESKO measured baseline fixture wattages for a representative sample of fixtures from a number of pre-installation LBC groups. The pre-installation LBC groups measured were based on fixture quantities and hours of operation. The type and number of fixtures chosen represented 69% of the total connected baseline lighting load.

Hours of operation for each building’s fixtures were determined via facility staff interviews and on-site observations, supported with the data collected from the lighting data loggers. These mutually agreed upon hours of operation were used for both baseline and post-installation energy savings calculations and are summarized included in the Post-Installation Report (PIR). In areas where occupancy sensors were installed, the baseline hours were multiplied by a reduction factor to obtain the post-installation hours of operations.

Post-Installation M&V Activities

Verified savings have been calculated using the equations above based on post-installation fixture wattage measurements and the as-built quantities. Measured post-installation power consumption was as expected for all meter codes. *Attachment 1A: Building Summary* presents the verified savings by building based on the post-installation activities for this ECM.

The Year One verified energy and demand cost savings of these ECMs are \$216,141, which is \$35,274 more than the guaranteed savings of \$180,867. This excess savings was caused by some additional exterior fixtures that were identified for retrofit during construction at several schools, and actual utility rates higher than originally estimated. Details of these savings are outlined in the table below:

TABLE 2-1: SUMMARY OF LIGHTING SAVINGS – YEAR ONE

ECM-1	Electric Demand (kW)	Electricity (kWh)	Natural Gas/Propane (therms)	Utility Savings (\$)	O&M Savings (\$)	Total Savings (\$)
Guaranteed Savings	3,074	579,063	(731)	\$123,845	\$6,254	\$130,099
Verified Savings	3,228	571,415	(741)	\$129,887	\$5,898	\$135,786

ECM-2	Electric Demand (kW)	Electricity (kWh)	Natural Gas/Propane (therms)	Utility Savings (\$)	O&M Savings (\$)	Total Savings (\$)
Guaranteed Savings	---	296,226	---	\$45,824	\$4,944	\$50,768
Verified Savings	---	331,833	---	\$74,991	\$5,363	\$80,355

Performance Period M&V Activities

During the performance period, NO RESCO completed an on-site inspection of the ECMs on November 9, 2016. This inspection was performed by Nicole Bowling of NO RESCO and is included as *Attachment 0A: Annual Inspection Report*. During the inspection the following issues were identified:

- ▶ Pleasant Grove Middle School- Customer noted that there are no emergency fixtures installed in the Locker Rooms and that there are also no windows for ambient light in case of emergency or power failure.
- ▶ Marina Village Middle School - It was noted during the Year One inspection that NO RESCO removed the switch on one side of the room and only installed one occupancy sensor at the other entry into the Chemistry Classroom. The door without the switch is the main entry point to the room and it is quite dark at all times. In addition, it was noted that you have to be near the middle of the room in order to activate it.
- ▶ Lake Forest Elementary School - During the Year One inspection, the customer noted that one of the three-headed parking lot fixtures is not working. The Rescue Union facilities team has tried to repair and it still will not work. It is suspected that there is a fray in the line and it has grounded out.

ECM-3: ROOFTOP UNIT (RTU) OUTSIDE AIR RETRO-COMMISSIONING

NORESCO based the M&V plan for this ECM on IPMVP Option A.

This ECM increased the effectiveness of the existing stand-alone rooftop HVAC unit (RTU) economizers at several schools, and also optimized enthalpy economizer settings. NORESKO surveyed RTUs and identified mechanical and electrical issues that were preventing proper economizer operation.

Savings from this ECM come from better economizer operation, which increases the amount of outside air used to cool the buildings. This reduces the amount of air the HVAC system must cool, thereby lowering the cooling costs.

Spreadsheet models of heating and cooling use were developed for each school using data from the following sources:

- ▶ Building drawings (building areas, construction, and HVAC equipment capacities)
- ▶ Local weather data
- ▶ Electric demand and usage data from billing records
- ▶ Fuel usage from billing records
- ▶ Estimated existing equipment parameters and efficiency
- ▶ Discussions with facility personnel (occupancy hours, setpoints, number of occupants, operating hours of equipment)

Key parameters that affected baseline energy use included heating and cooling system efficiency, weather, operating hours, building populations, temperature setpoints, and building construction and insulating values. If any of these parameters could not be determined from these sources, NORESKO estimated the parameter based on standard engineering practices and experience.

Specifics of the information used the baseline and post-installation models are included in Attachment K-1 of ESA.

Baseline M&V Activities

NORESCO surveyed the mechanical systems and interviewed facility personnel to establish the baseline occupied and unoccupied hours and temperatures and schedules. This information was used in the baseline spreadsheet model, along with the following information gathered during the surveys:

- ▶ Equipment nameplate data (capacity, efficiency)
- ▶ Equipment type
- ▶ Equipment configuration
- ▶ Thermal zone designations

Post-Installation M&V Activities

Post-installation energy consumption was calculated using the spreadsheet models described above, updated to reflect the repairs and adjustments included in this ECM. During the commissioning process equipment was inspected to verify proper installation and setup of the economizers, and that the equipment is capable of achieving verified energy savings. Economizers are operating based on enthalpy as intended. The following work was verified as being performed as designed:

- ▶ Marina Village Middle School Library
 - Replaced economizer components on RTU HP-4 and installed new controller that is connected to existing BAS.
 - Optimized enthalpy settings on HPs 1, 2, 3 and 5.
- ▶ Pleasant Grove Elementary School
 - Replaced economizer controller on unit AC-C6 and connected to existing BAS.
 - Optimized enthalpy settings in the Administration, A, B, C, and E buildings.
- ▶ Rescue Elementary School
 - Replaced economizer components on RTU C-1 and installed new controller that is connected to existing BAS.
 - Optimized enthalpy settings in Buildings C and D.

Based on the successful commissioning of this ECM, kWh savings are verified to be met, while cost savings are verified to be \$665, which is \$171 higher than the guaranteed savings of \$494. Details of these savings are outlined in the table below:

TABLE 3-1: SUMMARY OF ECM 3 SAVINGS FOR YEAR ONE

ECM-3	Electric Demand (kW)	Electricity (kWh)	Natural Gas/Propane (therms)	Utility Savings (\$)	O&M Savings (\$)	Total Savings (\$)
Guaranteed Savings	---	3,219	---	\$494	\$---	\$494
Verified Savings	---	3,219	---	\$665	\$---	\$665

Performance Period M&V Activities

During the performance period, NO RESCO completed an on-site inspection of the ECMs on November 9, 2016. This inspection was performed by Nicole Bowling of NO RESCO and is included as *Attachment 0A: Annual Inspection Report*. During the inspection the no issues were identified.

ECM-4: BAS HARDWARE UPGRADE

NORESKO did not include any guaranteed savings for this ECM and hence an M&V Plan was not required.

ECM-5: PORTABLE CLASSROOM CONTROLS UPGRADE

NORESKO based the M&V plan for this ECM on IPMVP Option A.

This ECM replaced existing thermostats in portable classrooms with new wireless thermostats, occupancy and door contact sensors. Savings from this ECM come from turning off HVAC equipment when spaces are unoccupied, as well as implementing consistent and more reasonable heating and cooling setpoints across the schools.

Spreadsheet models of heating and cooling use were developed for each school using data from the following sources:

- ▶ Building drawings (building areas, construction, and HVAC equipment capacities)
- ▶ Local weather data
- ▶ Electric demand and usage data from billing records
- ▶ Fuel usage from billing records
- ▶ Estimated existing equipment parameters and efficiency
- ▶ Discussions with facility personnel (occupancy hours, setpoints, number of occupants, operating hours of equipment)

Key parameters that affected baseline energy use included heating and cooling system efficiency, weather, operating hours, building populations, temperature setpoints, and building construction and insulating values. If any of these parameters could not be determined from these sources, NORESKO estimated the parameter based on standard engineering practices and experience.

Specifics of the information used the baseline and post-installation models are included in Attachment K-1 of ESA.

Baseline M&V Activities

Pre-installation audits and site observations were used for establishing the baseline heating and cooling energy use in conjunction with manufacturer's specifications and nameplate data. Characteristics of baseline HVAC equipment were used to create the spreadsheet models with regards to heating and cooling loads and operating hours. The following additional information was gathered during the surveys:

- ▶ Equipment nameplate data (capacity, efficiency)
- ▶ Equipment type
- ▶ Equipment configuration
- ▶ Thermal zone designations

Post-Installation M&V Activities

Post-installation energy consumption was calculated using the spreadsheet models described above, based on the reduced operating hours from the new thermostats and sensors. During the commissioning process equipment was inspected to verify proper installation and programming, and that the equipment is capable of achieving verified energy savings. The following work was verified as being performed as designed:

- ▶ Rescue Elementary School
 - Installed new wireless thermostats with occupancy sensors in Classrooms F1-5, C7-9, and Multipurpose Room.
- ▶ Jackson Elementary School
 - Installed new wireless thermostats with occupancy sensors in Classrooms F7 and F8.
- ▶ Lake Forest Elementary School
 - Installed new wireless thermostats with occupancy sensors in Classrooms C1-4, D1-3, E1-2, F1-3 and F8.
- ▶ Marina Village Middle School
 - Installed new wireless thermostat with occupancy sensor in Classroom 29.

Based on the successful commissioning of this ECM, kWh savings are met, while cost savings are verified to be \$3,055, which is \$1,081 higher than the guaranteed savings of \$1,974. Details of these savings are outlined in the table below.

TABLE 5-1: SUMMARY OF ECM 5 SAVINGS FOR YEAR ONE

ECM-5	Electric Demand (kW)	Electricity (kWh)	Natural Gas/Propane (therms)	Utility Savings (\$)	O&M Savings (\$)	Total Savings (\$)
Guaranteed Savings	(16)	11,376	---	\$1,974	\$---	\$1,974
Verified Savings	(16)	11,376	---	\$3,055	\$---	\$3,055

Performance Period M&V Activities

During the performance period, NO RESCO completed an on-site inspection of the ECMs on November 9, 2016. This inspection was performed by Nicole Bowling of NO RESCO and is included as *Attachment 0A: Annual Inspection Report*. During the inspection the no issues were identified.