

Sustainable Schools Program PY6 Evaluation Report

Final

Energy Efficiency / Demand Response Plan:
Plan Year 6
(6/1/2013-5/31/2014)

Presented to
Commonwealth Edison Company

January 22, 2015

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Executive Summary

This report presents a summary of the findings and results from the impact and process evaluation of the PY6¹ Sustainable Schools Program. The Sustainable Schools Program (SSP) was launched in June of 2013 and implemented by Willdan Energy Solutions (Willdan). The targeted customers for the SSP are independent schools, ranging from daycare/pre-school facilities through high schools that are not served through Department of Commerce and Economic Opportunity (DCEO). The program offers a no-cost energy survey of the facilities conducted by a trained professional followed by a list of recommended improvements to the facility. After the school decision-maker approves the installations, the lighting measures are installed at the facility with no co-pay required. In PY6, all of the participants have opted for the free lighting installations rather than the cost-shared HVAC improvements. The program's measures are listed in Section 7.2.1, Data Tracking. Because the program transitioned from a third-party program in EPY6 to part of the Smart Ideas portfolio in EPY7, the implementation contractor attempted to finish the program year as close to the target savings as possible. The target net savings goal was 2,000 MWh and our analysis yielded 1,979 MWh.

E.1. Program Savings

Table E-1. summarizes the electricity savings from the Sustainable Schools Program.

Table E-1. PY6 Total Program Electric Savings

Savings Category †	Energy Savings (MWh)	Demand Savings (MW)	Peak Demand Savings (MW)
Ex-Ante Gross Savings	2,272	Not tracked	Not tracked
Verified Gross Savings	2,083	0.73	0.14
Verified Net Savings	1,979	0.69	0.13

Source: Willdan Energy Solutions tracking data and Navigant team analysis.

¹ The PY6 program year began June 1, 2013 and ended May 31, 2014.

E.2. Program Savings by Channel

Table E-2. PY6 Program Results by School Type

Research Category	Ex-Ante Gross Savings (MWh)	Verified Gross Savings (MWh)	Verified Gross Peak Demand Reduction (MW)	Verified Gross Energy Realization Rate	NTGR†	Verified Net Savings (MWh)	Verified Net Peak Demand Reduction (MW)
Child Care/Preschool	678	581	0.038	86%	0.95	552	0.036
Preschool/Kindergarten	128	113	0.008	88%	0.95	107	0.008
Elementary School	653	502	0.048	77%	0.95	477	0.046
Elementary/Middle School	558	567	0.033	102%	0.95	539	0.031
Middle School/High School	254	320	0.010	126%	0.95	304	0.010
Total	2,272	2,083	0.14	92%	0.95	1,979	0.13

Source: Willdan Energy Solutions tracking data and Navigant team analysis. Note: Totals do not sum exactly due to rounding differences.

† Based on evaluation research findings.

E.3. Impact Estimate Parameters for Future Use

In the course of our PY6 research, the evaluation did research on parameters used in impact calculations including those in the Illinois TRM. Some of those parameters are eligible for deeming for future program years or for inclusion in future versions of the TRM. The evaluation team’s parameters recommended for future use are shown in the following table.

Table E-3. Impact Estimate Parameters for Future Use

Parameter	Value	Data Source
Net-to-Gross Ratio	0.95	Participant Surveys and Navigant Analysis

Source: Evaluation Analysis

E.4. Program Volumetric Detail

The program had 74 participants in PY6 and installed 10,777 measures as shown in the following table.

Table E-4. PY6 Volumetric Findings Detail

Participation	
School Assessments	86
Schools with installed measures	74
Total CFL bulbs	1,159
Total LEDs bulbs	713
Total T-8 fixtures	8,295
Total Occupancy Sensors units	610
Total measures	10,777

Source: Willdan Energy Solutions tracking data and Navigant team analysis.

E.5. Results Summary

The following table summarizes the key metrics from PY6.

Table E-5. PY6 Results Summary

Participation	Units	PY6
Net Savings	MWh	1,979
Net Peak Demand Reduction	MW	0.13
Gross Savings	MWh	2,083
Gross Peak Demand Reduction	MW	0.14
Program Realization Rate [‡]	%	92
Program NTG Ratio [‡]	#	0.95
Assessments Completed	#	86*
Direct Installed Measures	#	10,777
Completed Projects	#	74
Customers touched	#	86*

Source: Willdan Energy Solutions tracking data and Navigant team analysis.

[‡] Based on Navigant analysis

*Willdan contacted 1,422 schools via email, phone, flyer, brochure, and/or personal visit and completed a total of 86 assessments.²

²Email from Ted Fetters and Alicia White, Willdan Energy Solutions, June 13, 2014.

E.6. Key Findings and Recommendations

Overall, the SSP achieved 99% of its net savings goal by installing lighting measures in 74 schools. The marketing and outreach effort of contacting 1,422 schools resulted in 86 assessments completed and a high conversation rate of 86% for schools who agreed to have energy efficient lighting measures installed. The program overall realization rate was determined to be 92% due to adjustments from hours of school operation by school category, waste heat factors for energy by school category and adjustment made to wattages of Mercury Vapor, Metal Halide and High Pressure Sodium bulb measures. Although the implementation contractor did not track demand savings, Navigant calculated gross peak demand savings as 0.14 MW and net peak demand savings as 0.13 MW.

The research conducted via the participant telephone surveys, indicated that the participants reported high levels of satisfaction with all queried aspects of the program including: assessments, application process, measures installed, ComEd staff, Willdan Energy Solutions staff, installation contractor staff, and the overall program. The following provides insight into key program findings and recommendations.³

Program Volumetric Review.

Finding 1. Much of the program information is collected via hand-written notes and the program data in the tracking system contains some irregularities regarding installations and savings since most of the program data is manually inputted.

Recommendation 1. To improve accuracy, consider switching to a tablet-based data input system used in the field to decrease the number of errors introduced when someone tries to interpret handwritten information.

Marketing and Outreach

Finding 2. School decision makers reported initial “skepticism” upon learning about the program and the top three preferred communication methods about program opportunities reported by school participants were (1) in person advisor, (2) e-mail and (3) telephone call.

Recommendation 2. Since school decision-makers report having skepticism toward energy efficiency programs and similar opportunities, continuing a “high touch” approach like an in-person visit or telephone call or personalized email will likely to continue to be effective. Hosting program information on a ComEd website would also allay school decision makers’ concerns about the legitimacy of the program. Since trade allies may have an existing and trusted relationship with school decision-makers, consider adding them to the outreach strategy.

Process Evaluation.

Finding 3. Participants were highly satisfied with their overall program experience and several offered to provide “peer-to-peer” outreach to better advertise the program and its benefits.

³ Numbered findings and recommendations in this section are the same as those found in the Findings and Recommendations section of the evaluation report for ease of reference between each section.

Recommendation 3. If possible, provide a customer survey card or website link to participants upon completion of installations so that those who would like to promote the program have an opportunity to do so.

Verified Gross Impacts and Realization Rate

Finding 4. The tracking system did not include demand reduction savings.

Recommendation 4. Include ex ante demand reduction savings calculations in the tracking system.

Finding 5. The program realization rate is 92 percent due to adjustments made for hours of school operation by category, waste heat factors for energy by school category and adjustment made to wattages of Mercury Vapor, Metal Halide and High Pressure Sodium bulb measures.

Recommendation 5. Use these adjustments to better reflect TRM values within school categories.

Program Participation

Finding 6. Most of the schools that agreed to have an assessment performed also agreed to have direct energy efficient lighting installations performed.

Recommendation 6. Continue to encourage schools to have their facilities assessed for energy use. Consider using the fact that most schools, upon learning about their energy use, decide to participate in the program.

1. Introduction

1.1 Program Description

The Sustainable Schools Program (SSP) was launched in June of 2013 and implemented by Willdan Energy Solutions (Willdan). The targeted customers for the SSP are independent schools, ranging from daycare/pre-school facilities through high schools that are not served through Department of Commerce and Economic Opportunity (DCEO). The program offers a no-cost energy survey of the facilities conducted by a trained professional followed by a list of recommended improvements to the facility. After the school decision-maker approves the installations, the lighting measures are installed at the facility with no co-pay required. In EPY6, all of the participants have opted for the free lighting installations rather than the cost-shared HVAC improvements. The program's measures are listed in Section 7.3.1.

The implementation contractor contacted 1,422 independent schools via email, telephone, flyer, brochure, and/or personal visit. Some of the participating schools, notably the Montessori schools, provided peer-to-peer marketing via the Montessori school network. Of the contacted schools, 86 schools received a comprehensive assessment of their facility's energy use, and 74 schools received directly installed measures including CFLs, LEDs, T-8 fixtures, and occupancy sensors. Of the different types of schools, participation was distributed among these types: 30 childcare/preschools, 24 elementary schools, 11 elementary/middle schools, six preschool/kindergartens, and three middle/high schools.

1.2 Evaluation Objectives

The Evaluation Team identified the following key researchable questions for EPY6:

1.2.1 Impact Questions

1. What is the estimated net-to-gross ratio?
2. What is the program's verified net and gross savings?
3. Are the tracking systems adequately capturing the necessary data to tally savings for the program accurately?
4. Are TRM algorithms and measure savings applied correctly and accurately reflected in the program(s) tracking system(s)?

1.2.2 Process Questions

1. What are the most effective outreach and marketing strategies?
2. What is the participant satisfaction with aspects of the program?
3. What areas could the program improve to create a more effective program for customers and help increase the energy impacts?

2. Evaluation Approach

For the SSP, the overall gross impact evaluation approach included: determining that the savings’ values in the Willdan Energy Systems’ tracking database were calculated according to the IL TRM; estimating the hours of use for each of five school types based on values in the IL TRM (for High/Middle and Elementary Schools) and research (for Child Care Centers, Kindergarten and Preschools); and applying a waste heat factor for energy from the IL TRM for the measures installed. The net impact evaluation approach included determining free ridership and spillover from the participant survey responses in order to estimate a net-to-gross ratio. Overall, the program virtually met its target goal.

2.1 Overview of Data Collection Activities

The core data collection activities included program manager interviews, participant telephone surveys, and a review of the implementation contractor’s tracking system. The full set of data collection activities is shown in the following tables.

Table 2-1. Primary Data Collection Activities

What	Who	Target Completes	Completes Achieved
Program Tracking Database	Participants	74	74
In Depth Interviews	Program Manager/Implementer Staff	2	2
Engineering Desk Review	Participants	15	15
Telephone Survey	Participants	Attempted Census	16

2.2 Verified Savings Parameters

Verified Gross and Net energy savings and demand savings resulting from the PY6 Sustainable Schools Program were calculated using the deemed values as defined by the Illinois TRM version 2.0⁴ and research and analysis that Navigant conducted through participant surveys and other research (e.g. determining hours of operation from school websites). Energy savings and demand savings are estimated using the formulas as specified in the TRM. Section 3.3 contains the details of the approach and data used in the calculations for the gross impact analysis, and Section 3.4 contains the details of the approach and the data used in the calculations for the net impact analysis.

The tracking system did not categorize the 74 participating schools in different categories; therefore Navigant categorized schools in five categories to obtain reasonable estimates of hours of use (HOU) and waste heat factors for energy (WHFe). Navigant performed online research to categorize the schools in five different categories as shown below.

1. Child Care/Preschool
2. Elementary School

⁴ Source: <http://www.ilsag.info/technical-reference-manual.html>

- 3. Elementary/Middle School
- 4. High/Middle School
- 5. Preschool/Kindergarten

The following table presents the parameters that were used in the verified gross and net savings calculations and indicates which were examined through evaluation activities and which were deemed.

Table 2-2. Verified Savings Parameter Data Sources

Gross Savings Input Parameters	Data Source	Deemed or Evaluated?
Waste Heat Factors for Energy	IL TRM	Deemed
Schools Hours of Use (by type)	IL TRM and Navigant Research	Evaluated
Realization Rate	Navigant Analysis	Evaluated
NTGR	Navigant Analysis	Evaluated

The sources for the primary data for the impact evaluation include: the program’s tracking database for the measure quantity and types; school hours of use were obtained from the schools’ websites and eight holidays were applied to determine an estimate of annual hours of operation (by school type); and waste heat factor for energy (by school type) was applied from the TRM.

The verified gross realization rate is the ratio of verified gross savings to ex-ante gross savings from the program tracking system. Navigant calculated verified gross energy (kWh) and demand savings (kW) using Illinois TRM methodology and algorithms and engineering analysis.

2.2.1 Verified Net Program Savings Analysis Approach

Verified net energy and demand savings were calculated by multiplying the verified gross savings estimates by a net-to-gross ratio (NTGR). In EPY6, the NTGR estimates used to calculate the net verified savings were based on evaluation research from telephone surveys of participants and Navigant analysis.

These NTGR research methods used participant survey results including a self-report method where participants answer questions about the program. The participant survey instrument asks about participants’ awareness of the measures identified and their inclination to pursue corrective actions for those measures absent the program. Navigant collected data for the net-to-gross ratio estimate by contacting the participating schools by telephone and completing 16 interviews. The questionnaire is listed in 7.1.2.3 and included a battery of questions to determine free rider and spillover effects.

2.2.1.1 Free-Ridership

Free-ridership was assessed using a customer self-report approach following a framework that was developed for evaluating net savings of California’s 2006-2008 non-residential energy efficiency programs, and detailed in Section 7.1.3.1.

Self-Report Free-ridership Algorithm

$$\text{Free ridership} = [\text{Average (Likelihood,10-Importance)}]/10$$

2.2.1.2 *Spillover*

Spillover refers to additional energy efficient measures participants adopted due to program influences, but without any financial assistance from the program. Survey free-ridership questions were followed by questions designed to estimate spillover. These questions asked about recent purchases of any additional energy-efficient measures that were made without any additional financial assistance from the program. Details of the spillover estimate are contained in Section 7.1.3.2.

2.2.1.3 *Net-to-Gross Ratio Estimate*

Once free ridership and spillover have been estimated, the NTG ratio is calculated as follows:

Net-to-Gross Ratio Algorithm:

$$\text{NTGR} = 1 - \text{Free-ridership} + \text{Spillover}$$

Where:

- Free ridership is the energy savings that would have occurred even in the absence of program activities and sponsorship, expressed as a percent of gross impact.
- Spillover is the energy savings that occurred as a result of program activities and sponsorships, but was not included in the gross impact accounting, expressed as a percent of gross impact.

2.3 *Process Evaluation*

Navigant used information from interviews with ComEd’s program manager, the implementation contractor’s program manager, and telephone interviews with 16 participating schools. Navigant conducted a process evaluation to determine:

- how effective the program’s marketing and outreach was for the participants,
- how the program is benefitting the participants,
- what are the participants’ levels of satisfaction with various aspects of the program, and
- what the participants recommended to improve the program.

3. Gross Impact Evaluation

Overall, the tracking system adequately captured the information needed for successful implementation and evaluation of the program. There are two suggested modifications to enhance the tracking system. The ex-ante gross calculations used generalized assumptions for the hours of use and waste heat factors for energy in the calculations for energy savings according to the TRM. For the verified gross savings, in order to determine appropriate hours of use and waste heat factors for energy, Navigant categorized the 74 participating schools into five school categories: Childcare/Preschool, Elementary, Preschool/Kindergarten, Elementary/Middle and Middle/High. We used both the IL TRM and independent research to determine hours of use and waste heat factors for energy for each school type and applied these inputs in our verified gross savings calculations. Also for the verified gross savings, we applied a baseline adjustment for bulbs that were replaced with energy efficient bulbs, in accordance with the Energy Independence and Security Act regulations that dictate higher efficiency baseline bulbs. The verified gross realization rate is the ratio of verified gross savings to ex-ante gross savings from the program tracking system and varied between 77 percent and 126 percent depending on the waste heat factors for energy, hours of use for the five different school categories adjustments made to wattages of Mercury Vapor, Metal Halide and High Pressure Sodium bulb measures.

3.1 Tracking System Review

Our review found the Willdan Energy Solutions spreadsheet tracking system adequately captures the salient information needed to successfully implement the program, and we have suggested modifications to enhance the tracking system by adding HVAC measures to the assessment for future use and using a system that protects customers' privacy for tracking program participants. The "measures" spreadsheet tab contains information about the existing measure to be replaced as well as the savings associated with the directly installed program measure. In addition, the "totals" spreadsheet tab also contains the school's information – the point of contact information as well as the school's address, and a list of installed measures. Section 7.3.1 lists the information contained in the tracking spreadsheet.

3.2 Program Volumetric Findings

As part of our ex-ante savings review, the evaluation team reviewed project documentation files for 15 projects that were randomly selected. Navigant reviewed information included in the project files and compared entries in the project files to corresponding entries in the program tracking database for accuracy and completeness. Results and details from the desk review are contained in the "Verification, Due Diligence and Tracking System memo" to ComEd on July 28, 2014 and summarized here. The review indicated that the measures installed by the program were eligible based on the type of existing equipment and type of energy efficient equipment directly installed.

For all 15 schools, the energy efficiency measures listed on the audit report were eligible based on the existing equipment that was being replaced. Navigant reviewed the measures in the implementation contractor's tracking data base and compared those measures to the measures contained in the project

record of the audit report, as-installed report, installer invoices (where itemized invoices were available), and summary report provided to the school. Considering that this program, in a similar manner to other programs, relies on a significant amount of hand-written information, irregularities were observed in the “paper trail.” For example, for School #1, the invoice lists the LED wallpack as 50W, however the summary report to the school lists the LED wallpack as 60W.

It is well understood that the “as-installed” configuration of measures would differ from the recommended measures listed on the audit report due to a variety of understandable reasons including that the wiring configuration for the existing measure was not compatible with the energy efficient measure or that the existing fixture could not be removed without damaging other components, or other reasons common in existing facilities. Each of the 15 schools had equipment installed that was different in type or quantity (or both) from what was listed in the audit reports. Some installers listed the modification reasons on the work order, however some installers did not. Additional information from the engineering desk review of the installation processes is found in Section 7.1.1.

The final tracking system database⁵ showed a total ex ante savings of 2,272 MWh shown in Table 3-1. Ex ante demand reduction savings in MW was not provided in the database.

Table 3-1. Ex-Ante Gross Energy Savings by School Category

School Category	Ex-Ante Gross Energy Savings (MWh)	Ex-Ante Gross Demand Reduction (MW)
Childcare/Preschool	678	Not provided
Preschool/Kindergarten	128	Not provided
Elementary	653	Not provided
Elementary/Middle	558	Not provided
Middle/High	254	Not provided
Total	2,272	Not provided

Total does not sum exactly due to rounding.

Source: Willdan Energy Solutions Tracking System

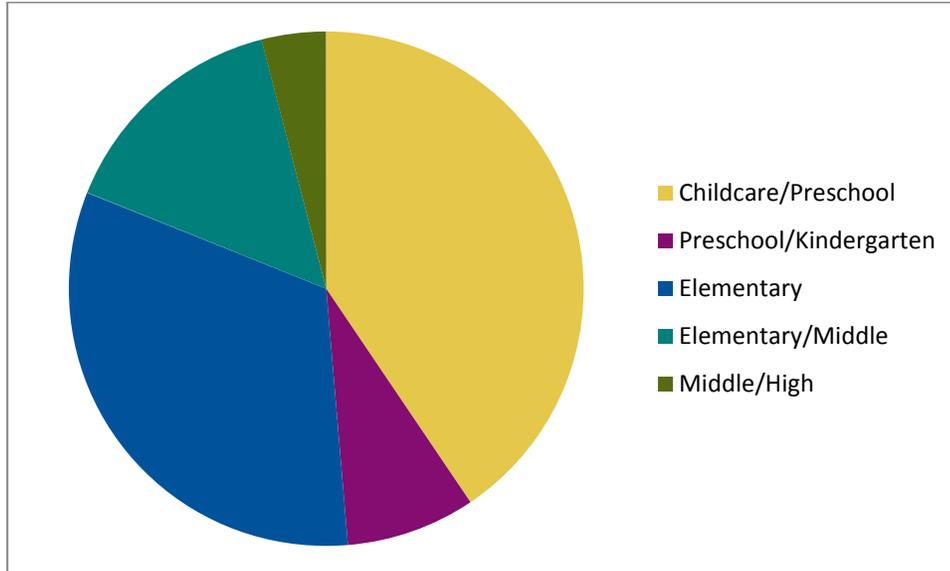
Table 3-2. PY6 Volumetric Findings Detail

Participation	
School Assessments	86
School with installed measures	74
Total CFL bulbs	1,159
Total LEDs bulbs	713
Total T-8 fixtures	8,295
Total Occupancy Sensors units	610
Total measures	10,777

Source: Willdan Energy Solutions tracking data and Navigant team analysis.

⁵ From Willdan Energy Solutions spreadsheet, dated 5.30.2014, retrieved 06.13.2014 via FTP server.

Figure 3-1. Number of Participating Schools by Type



Source: Evaluation Analysis

3.3 Gross Program Impact Parameter Estimates

Navigant used IL TRM (Final Technical Version August 20, 2012) to verify the baseline and retrofit measures in order to calculate the verified savings. Schools are categorized in different categories to obtain reasonable estimates of hours of operation and waste heat factors for energy. As described in Section 2, energy savings and peak demand savings are estimated using the following formulas as specified in the TRM:

CFLs

$$\Delta kWh = ((WattsBase - WattsEE) / 1000) * ISR * Hours * WHFe$$

$$\Delta kW = ((WattsBase - WattsEE) / 1000) * ISR * WHFd * CF$$

Where:

WattsBase = Actual (if retrofit measure) or based on lumens of CFL bulb and program year installed

WattsEE = Actual wattage of CFL purchased or installed

ISR = In Service Rate or the percentage of units rebated that get installed.

Hours = Average hours of use per year

WHFe = Waste heat factor for energy to account for cooling energy savings from efficient lighting

WHFd = Waste heat factor for demand to account for cooling savings from efficient lighting in cooled buildings is provided in the TRM Reference Table in Section 6.5. If unknown, use the miscellaneous value.

CF = Summer Peak Coincidence Factor for measure is provided in the Reference Table in Section 6.5. If unknown, use the miscellaneous value.

LED Exit Signs

$$\Delta kWh = ((WattsBase - WattsEE) / 1000) * Hours * WHFe$$

$$\Delta kW = ((WattsBase - WattsEE) / 1000) * WHFd * CF$$

LED fixtures

$$\Delta kWh = ((Wattsbase - WattsEE) / 1000) * Hours * WHFe * ISR$$

$$\Delta kW = ((Wattsbase - WattsEE) / 1000) * ISR * WHFd * CF$$

Where:

Wattsbase = Input wattage of the existing system. Reference the “LED New and Baseline Assumptions” table for default values.

WattsEE = New Input wattage of EE fixture. See the “LED New and Baseline Assumptions” table. For ENERGY STAR rated lamps the following lumen equivalence tables should be used: Omnidirectional Lamps - ENERGY STAR Minimum Luminous Efficacy = 50Lm/W for <10W lamps and 55Lm/W for >=10W lamps.

WHFd = Waste Heat Factor for Demand to account for cooling savings from efficient lighting in cooled buildings

CF = Summer Peak Coincidence Factor

Occupancy Sensors

$$\Delta kWh = KWControlled * Hours * ESF * WHFe$$

$$\Delta kW = KWcontrolled * WHFd * (CFbaseline - CFos)$$

Where:

KwControlled = Total lighting load connected to the control in kilowatts. Savings is per control.
Hours = total operating hours of the controlled lighting circuit before the lighting controls are installed.

ESF = Energy Savings factor (represents the percentage reduction to the operating Hours from the non-controlled baseline lighting system).

WHFe = Waste heat factor for energy to account for cooling energy savings from efficient lighting

WHFd = Waste Heat Factor for Demand to account for cooling savings from efficient lighting in cooled buildings is provided in the Reference Table in Section 6.5.

CFbaseline = Baseline Summer Peak Coincidence Factor for is the lighting system without Occupancy Sensors installed selected from the Reference Table in Section 6.5 for each building type. If the building type is unknown, use the Miscellaneous value of 0.66

CFos = Retrofit Summer Peak Coincidence Factor the lighting system with Occupancy Sensors installed is 0.15 regardless of building type.

Energy Efficient Fluorescent Lighting

$$\Delta kWh = ((Wattsbase - WattsEE) / 1000) * Hours * WHFe * ISR$$

$$\Delta kW = ((Wattsbase - WattsEE) / 1000) * WHFd * CF * ISR$$

Where:

Wattsbase = Input wattage of the existing system which depends on the baseline fixture configuration (number and type of lamp) and ballast factor (if applicable) and number of fixtures.

WattsEE = New Input wattage of EE fixture which depends on new fixture configuration (number of lamps) and ballast factor (if applicable) (if applicable) and number of fixtures.

Hours = Average hours of use per year as provided by the customer or selected from the Reference Table in Section 4.5.

WHFe = Waste heat factor for energy to account for cooling energy savings from efficient lighting is selected from the Reference Table in Section 4.5 for each building type.

ISR = In Service Rate or the percentage of units rebated that get installed.

WHFd = Waste Heat Factor for Demand to account for cooling savings from efficient lighting in cooled buildings is selected from the Reference Table in Section 6.5 for each building type

CF= Summer Peak Coincidence Factor

The EM&V team conducted research to validate the parameters that were not specified in the TRM. The results are shown in the following tables.

Table 3-3. Verified Gross Savings Parameters

Gross Savings Input Parameters	Value	Deemed ‡ or Evaluated?
Quantity	Unit	Evaluated
Measure Type and Eligibility	Unit	Evaluated
Gross Savings per Unit, Sampled Deemed Measures	kWh	Deemed
Gross Demand Reduction per Unit, Sampled Deemed Measures	kW	Deemed
Verified Realization Rate on Ex-Ante Gross Savings (Lighting)	Percent	Evaluated

‡ State of Illinois Technical Reference Manual version 2.0 from <http://www.ilsag.info/technical-reference-manual.html>.

Hours of use (HOU): The implementer averaged HOU for Elementary and High/Middle School and applied it for all the participants. In order to reasonably estimate HOU, Navigant performed online research to categorize the schools in five different categories. The parameter values for Elementary/Middle school are the average of Elementary and High/Middle school. In particular for Child Care/Preschools and Kindergarten, the average value of HOU (2,814) calculated from the online research was used to determine verified savings. An HOU value of 2,814 represents about 20 percent of the difference between the High/Middle and Elementary school value. Based on the same logic, a reasonable estimate for screw based bulb HOU is 2,161. Table 3-4 is the HOU lookup table used to calculate verified savings.

Waste Heat Factor for Energy (WHFe): The WHFe values used for different schools are also documented in Table 3-4. For Elementary/Middle School, Child Care/Preschool and Kindergarten, a value of 1.22 was used.

Table 3-4. Parameter Lookup Values

Building Type (IL TRM)	School Type	HOU Applied		WHFe Applied*
		Fixtures	Screw based bulb	
High/Middle school	High/Middle school*	4,311	2,327	1.23
Elementary school	Elementary school*	2,422	2,118	1.21
	Elementary/Middle School**	3,366.5	2,222.5	1.22
Other	Child Care/Preschool***	2,814	2,161	1.22
	Preschool/Kindergarten***	2,814	2,161	1.22

Source: IL TRM and Navigant analysis

* TRM value

** Average of Elementary and High/Middle school (tracking database value)

*** Hours of operation were obtained from the schools' websites and 8 holidays were applied to obtain an estimate of annual hours of operation.

Waste Heat Factor for Demand (WHFd): The WHFd for High/Middle and Elementary schools were used as described in the IL TRM and an average value of 1.035 was used for other school type.

Coincidence Factor (CF): A values of 0.22 was used as described in the IL TRM.

These evaluation adjustments resulted in realization rates differing from 100 percent. Since the hours of operation (HOU) and waste heat factor for energy (WHFe) for High/Middle School are greater than the average value of HOU and WHFe used in the tracking database, the realization rate for High/Middle Schools is 126 percent. The overall program verified gross energy savings realization rate is 92 percent.

3.4 Verified Gross Program Impact Results

The resulting total program verified gross savings is 2,083 MWh and peak gross demand savings of 0.1 MW as shown in the following table. The following table presents savings by school type including groups where the estimate is not statistically significant at the 90/10 level. The realization rates varied between 77 percent and 126 percent based on the hours of use for the five different schools types and the waste heat factor for energy as described in the previous section.

Table 3-5. Verified Gross Savings by School Category

School Category	Gross Energy Savings (MWh)	Demand Reduction (MW)	Peak Demand Reduction (MW)
Child Care/Preschool			
Ex-Ante Gross Savings	678	Not provided	Not provided
Verified Gross Realization Rate ‡	86%	NA	NA
Verified Gross Savings	581	0.21	0.038
Elementary School			
Ex-Ante Gross Savings	653	Not provided	Not provided
Verified Gross Realization Rate ‡	77%	NA	NA
Verified Gross Savings	502	0.25	0.048
Elementary/Middle School			
Ex-Ante Gross Savings	558	Not provided	Not provided
Verified Gross Realization Rate ‡	102%	NA	NA
Verified Gross Savings	567	0.17	0.033
High/Middle School			
Ex-Ante Gross Savings	254	Not provided	Not provided
Verified Gross Realization Rate ‡	126%	NA	NA
Verified Gross Savings	320	0.05	0.010
Preschool/Kindergarten			
Ex-Ante Gross Savings	128	Not provided	Not provided
Verified Gross Realization Rate ‡	88%	NA	NA
Verified Gross Savings	113	0.04	0.008
Total Ex-Ante Gross Savings	2,272	Not provided	Not provided
Verified Program Gross Realization Rate ‡	92%	NA	NA
Total Verified Gross Savings	2,083	0.73	0.14

Source: Willdan Energy Solutions tracking data and Navigant team analysis.

‡ Based on evaluation research findings.

Navigant categorized schools in five categories to obtain reasonable estimates of hours of use (HOU) and waste heat factors for energy (WHFe). Navigant performed online research to categorize the schools in five different categories as described in Section 2. The main reason for the realization rate to differ from 100 percent is the adjustment made in the HOU value used for ex-post calculation.

1. For Child Care/Preschool: Navigant performed an online research and estimated a value of 2,814 and 2,161 HOU for fixtures and screw based bulb respectively as opposed to 3,366.5 and 2,222.5 used for ex-ante calculations.
2. For Elementary Schools: HOU values were used as described in the IL TRM
3. For Elementary/Middle School: HOU values of 3,366.5 and 2,222.5 for fixtures and screw based bulb respectively were used to calculate ex-post savings.
4. For High/Middle School: HOU values were used as described in the IL TRM.
5. For Preschool/Kindergarten: Navigant performed an online research and estimated a value of 2,814 and 2,161 HOU for fixtures and screw based bulb respectively as opposed to 3,366.5 and 2,222.5 used for ex-ante calculations.

4. Net Impact Evaluation

The NTGR value was calculated by the EM&V team and applied retrospectively to calculate verified net savings.

As described in Section 2, free-ridership and spillover was estimated through participant and ally surveys. Navigant calculated net-of-free-ridership for each interview and then savings-weighted net-of-free-ridership for the program. The evaluation calculated verified net savings as shown in the following table. The table presents savings at the measure group level including groups where the estimate is not statistically significant at the 90/10 level.

From the participant surveys, there was only one instance of spillover; however the spillover could not be quantified. The evaluation team used responses to the spillover questions to assess whether spillover may be occurring due to changes in behavior; however the responses did not offer enough detail to quantify the spillover.

The NTG that Navigant estimated (0.95) was higher than what the implementation contractor had used in their statement of work (0.85)⁶. The program’s first year target goal was 2,000 MWh of net savings and our analysis yielded 1,979 MWh.

Table 4-1. PY6 Verified Net Impact Savings Estimates by School Category

	Net Energy Savings (MWh)	Net Demand Reduction (MW)	Net Peak Demand Reduction (MW)	90/10 [†] Significance
Childcare/Preschool	552	0.20	0.036	N/A
Elementary	477	0.24	0.046	N/A
Elementary/Middle	539	0.16	0.031	N/A
High/Middle	304	0.05	0.010	N/A
Preschool/Kindergarten	107	0.04	0.008	N/A
Total Verified Net Savings	1,979	0.69	0.13*	N/A

Source: Evaluation Team analysis.

*Total does not sum exactly due to rounding and significant figures.

⁶ Sustainable Schools Program information from “Willdan Energy Solutions Sustainable Schools Program – Third Party Efficiency Program, Final Statement of Work, May 29, 2013.”

5. Process Evaluation

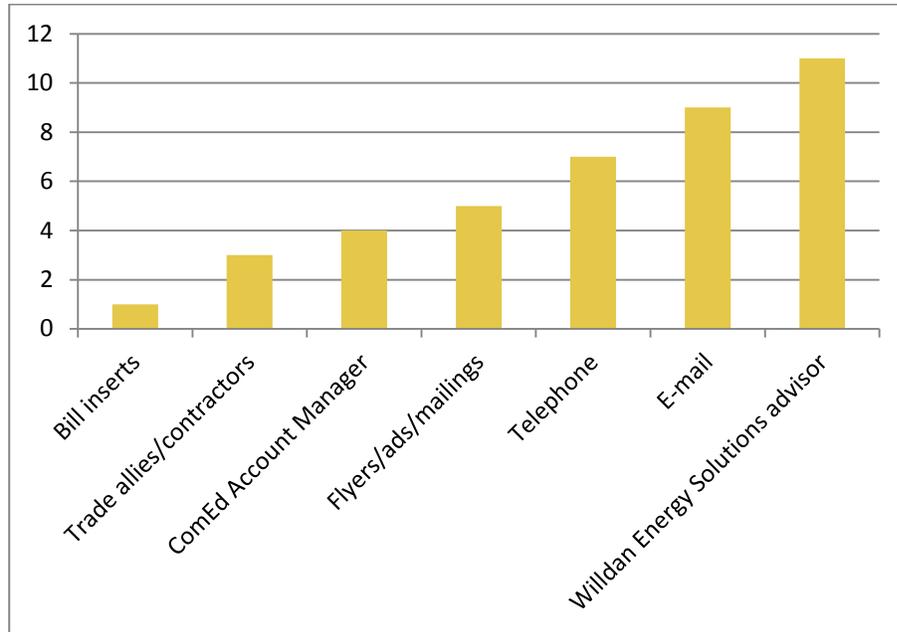
Navigant used information from interviews with ComEd staff, the implementation contractor’s program manager, and telephone interviews with 16 participating schools to conduct a process evaluation of the program. Navigant sought to determine how effective the program’s marketing and outreach was for the participants, how the program is benefitting participants, what participants’ satisfaction levels are, and what are the recommended improvements that the participants have for the program. Of the 16 schools, half owned and half rented their facility, and for half it was their school’s only location and for half it was one of several locations. The average age of the school facilities was 70 years, ranging from 30 years to 110 years. The size of the faculty/staff varied from six to 85 with an average of 25 people. The size of the student body varied from 15 – 500 with an average of 100 students.

Overall, schools’ staff was highly satisfied with all aspects of their experience participating in the SSP, including the assessment report, implementation contractor, the installer, and ComEd. The participants’ recommendations for improving the program included: greater publicity, better program information, and install additional equipment. All but one participant thought the program’s marketing materials were “very useful” or “somewhat useful” in providing information about the program.

5.1 Marketing and Outreach

The participants responded that the top three main ways to reach them about programs like SSP is (1) Willdan Energy Advisor comes to them in person (2) e-mail, and (3) telephone.

Figure 5-1. Responses to question “What are the main ways to reach you about energy efficiency programs like SSP?”



Source: Participant survey.

Most participants reported that they had never been nor were they likely to attend a ComEd customer event; however they thought that the ability to talk with someone in person at their schools was quite effective for their purposes and helped them be convinced it was not a “scam.” *“One thing we are always leery about is marketing scams. We couldn’t believe we could get [the energy efficient lighting] for free.”* (Sustainable Schools Program Participant)

Table 5-1. Responses to Marketing and Outreach Questions

Responses to question "have you seen or heard information about the ComEd Sustainable Schools Program. Have you ever..."	Yes	No	Don't Know
Received information about the program in your monthly utility bill?	1	9	6
Attended a ComEd customer event where the program was discussed?	0	16	0
Discussed the program with a ComEd Account Manager?	0	16	0
Discussed the program with a Contactor or Trade Ally?	0	16	0
Received information about the program in an Email?	2	14	0
Heard about the program from a colleague, friend or family member?	3	13	0
Attended a meeting, seminar or workshop where the program was presented?	0	16	0
Attended a webinar where the program was discussed?	0	16	0
Read about the program in a ComEd Newsletter?	1	15	0
Been directly contacted by a Willdan Energy Solutions outreach staff?	12	4	0

Source: Participant survey.

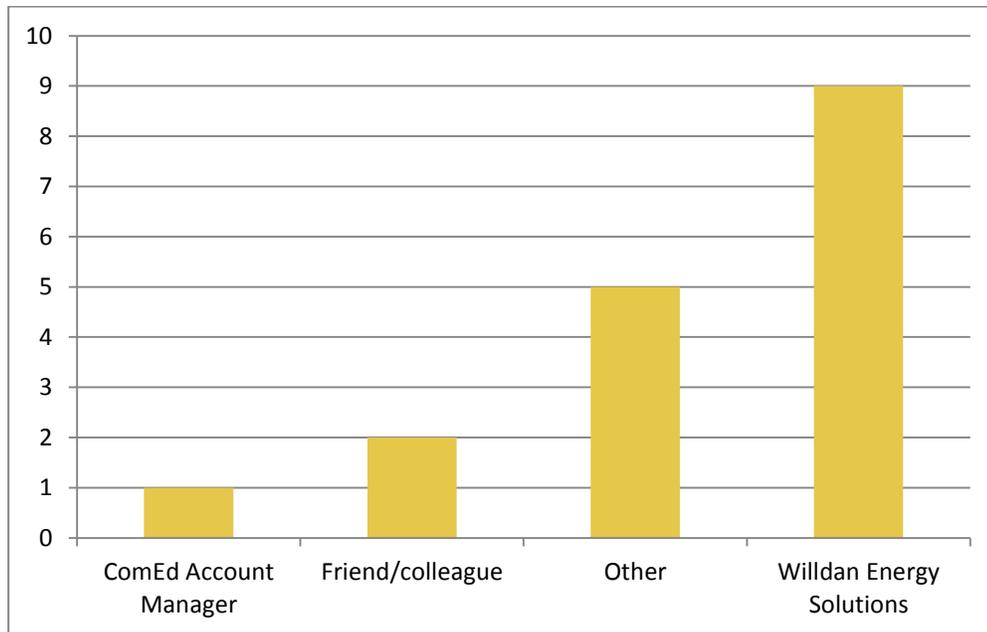
When asked how they first heard about SSP, most of the participants reported that the source was from a Willdan Energy Solutions advisor. One reported that they read about the program on ComEd’s web site. Another reported reading about the SSP in an email from Illinois State Board of Education. Another stated they had received a flyer in the mail and called Willdan Energy Solutions.

“The e-mail [about the Sustainable Schools Program] piqued my interest and then Willdan followed up with a phone call which was good because I remembered my questions about the program.” Sustainable Schools Program Participant

“[Trade allies] are the number 1 way of reaching us because [our school] already has a trusted relationship with [our contractor].” Sustainable Schools Program Participant

“[I would respond best to a] call from ComEd account manager. Bill inserts don’t get noticed [at our school]. Emails go in the delete file. The thing about it is, the ComEd account manager would have to have [solid] information for schools. If someone is going to make the call on behalf of ComEd, [that representative would] have to be on the ball enough to explain the program succinctly. And don’t have a Nevada area code. [I don’t want to receive] robo calls.” Sustainable Schools Program Participant

Figure 5-2. Responses to question “How did you first hear about SSP?”



Source: Participant survey.

5.2 Perceived Benefits of Participating

When asked to give the main benefits the participants received from participating in the SSP, the three most frequent responses were: (1) energy savings/saving money, (2) able to make improvements sooner, and (3) better quality/new equipment.

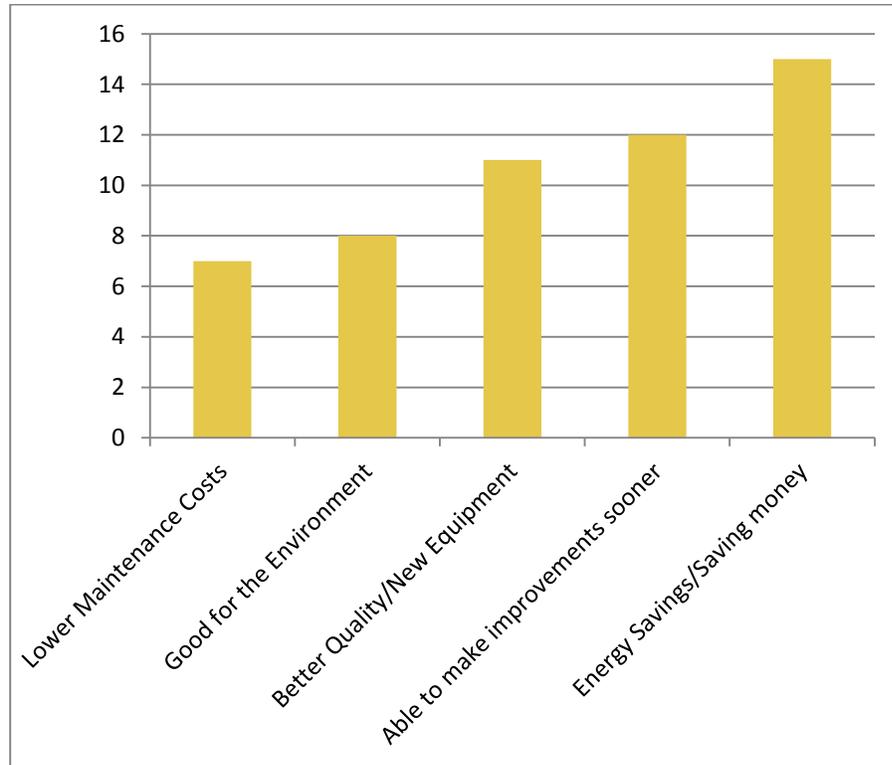
*“Part of the Montessori philosophy is sustainability- this [program] helps us meet our mission.”
Sustainable Schools Program Participant*

“[The implementation contractor] asked me what the savings was - I made a quick calculation for two months – [our school] used 15% less kWh than we used last year for the same two month period - Feb and March.” Sustainable Schools Program Participant

“I can’t thank the program and [the staff from Willdan Energy Solutions] enough. We have had tremendous savings and we have had parents comment favorably on the quality of lights.” Sustainable Schools Program Participant

“We are glad to have our new lights that are energy saving.” Sustainable Schools Program Participant

Figure 5-3. Responses to question “What are the main benefits of participating?”



Source: Participant survey.

5.3 Participant Satisfaction

Overall, the majority of the participants were highly satisfied with areas of their program experience including:

- Assessment Report
- Willdan Staff
- Application Process
- Program Measures
- Installer
- Sustainable Schools Program overall
- ComEd Overall

An industry best practice is to provide participants with a systematic way to provide comments on their participation experiences (e.g. postcard to fill in and send back, link to a website survey, etc.). According to ComEd staff, requiring vendors to provide customer feedback forms is considered for EPY7.⁷

“[The implementation contractor] folks came at the right time with the right set of circumstances I couldn’t have been happier.” Sustainable Schools Program Participant

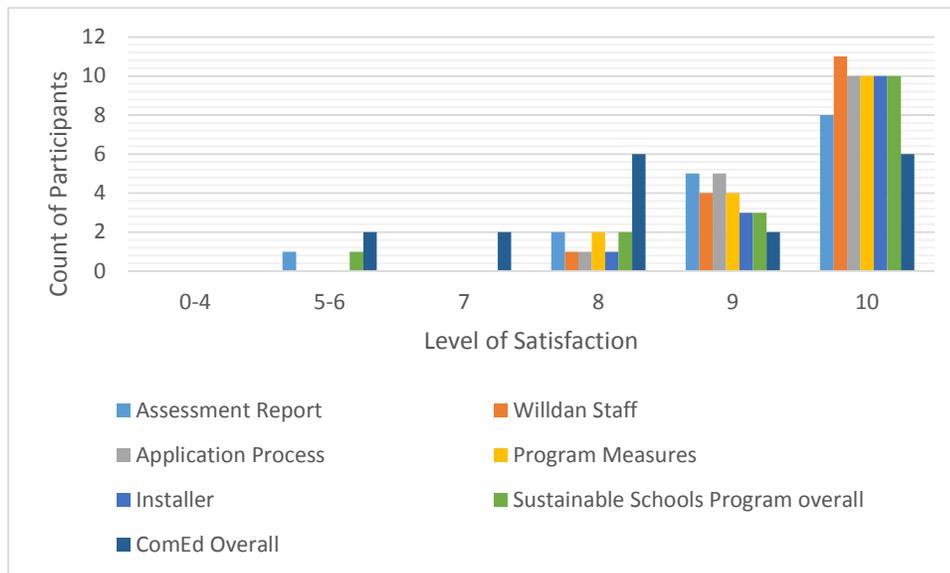
⁷ Telephone interview on March 3, 2014 with ComEd staff.

“The [Sustainable Schools] program was fabulous. People were extremely professional and knowledgeable and willing to answer “old lady’s” questions. From A-Z they were right there. I’d do it again.”
Sustainable Schools Program Participant

“We are a small private school and we really appreciate what ComEd did.” Sustainable Schools Program Participant

“We appreciate the help that we have received from ComEd and we enjoyed working with Willdan Energy Solutions.” Sustainable Schools Program Participant

Figure 5-4. Measures of Satisfaction as reported by Participants on Aspects of Program



Source: Participant survey.

Specific comment about Assessment report:

“[On the assessment] report, I could not tell if the report was for the life of the fixtures or one year - it could have been a little more explicit. I realize now it was annual savings, and it would have been better to have the explanation [in the report].” Sustainable Schools Program Participant

Specific comments about Installation Contractors:

“I sincerely mean this, the gentleman who led the [installation crew] - he was unbelievable. Keeping the installers organizers and cleaning up after the installers. I can’t say enough about that crew. Consciously made sure they watched what they said around the kids and [they were] careful around the kids.”
Sustainable Schools Program Participant

[Our school] has a nap time, [and the installation contractor] worked around our schedule. [The installation contractor] made it safe for the kids.” Sustainable Schools Program Participant

Our school has two facilities – I’d give the installation contractor at one [school] a “10” and the other a “6” because I had to have two crews to finish that job [at the second school]. The first crew [at the second school] wasn’t prepared and had the wrong information and didn’t finish everything. Willdan sent another crew who finished the work [at the second school].” Sustainable Schools Program Participant

Specific comments about Willdan Energy Solutions:

“[Our school] had been working for years with an electrician and [Willdan] allowed us to use our electrician instead of bringing in someone random. [The installation contractors] came in early morning and weekends so they didn’t disrupt the children in any way. The electrician’s company knew us and knew the buildings. A big win that way.” Sustainable Schools Program Participant

“The guy [from Willdan] was fabulous because I was very difficult about the color of the lights. The first time they sent the wrong lights and [the installer] came back in two weeks and reinstalled the lights I wanted and the color looks fantastic - the rendering works better with the school.” Sustainable Schools Program Participant

5.4 Participant Suggested Improvements

There was high variability among the responses for suggested improvements and several participated stated that they “didn’t know” or had “no recommendations.” *“They were so easy to work with - there were no hassles.” (Sustainable Schools Program Participant)* However, the majority of the participants reported that “greater publicity” would improve the program.

“[I would like a] report six months [following the installation] that highlights the energy savings in kWh and dollars so I can take it to my counterparts to encourage them to participate in the program.” Sustainable Schools Program Participant

“I don’t think independent schools know about this program.” Sustainable Schools Program Participant

“Other schools in the area can spread the word [about the benefits of the SSP] – [our school] could have our name on literature as a referral. [Our school] was skeptical at first because we did not have to pay a thing.” Sustainable Schools Program Participant

“Initially, [our school] was skeptical about the Sustainable Schools Program.” Sustainable Schools Program Participant

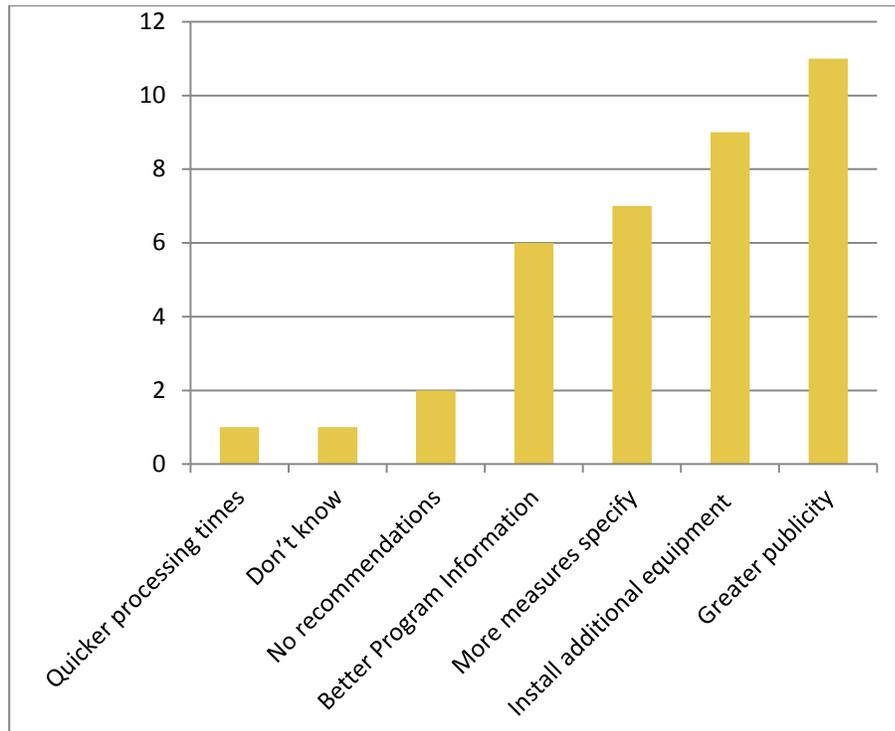
“I called ComEd because I thought [the Sustainable Schools Program] was a scam. I called the [ComEd] call center and they said Willdan was running a scam. [Our head of school] called [Willdan] and said [our school] will not work with Willdan. Willdan called ComEd and they left no rock unturned in rectifying [the miscommunication]. I received a phone call and an email from the ComEd Public Affairs Department

[confirming that the Sustainable Schools program was legitimate]" Sustainable Schools Program Participant

Additional eligible equipment and service suggested by participants included:

- Ceiling fan
- HVAC equipment
- LED lighting
- Refrigerator replacement
- Freezers
- Flood lights around the perimeter of the school buildings
- Annual energy assessment

Figure 5-5. Responses to question "How would you improve the ComEd Sustainable Schools Program?"



Source: Participant survey.

6. Findings and Recommendations

Overall, the SSP performed well in its first year of operation and was well received by the participants who reported high levels of satisfaction with various aspects of the programs. Because the program transitioned from a third-party program in EPY6 to part of the Smart Ideas portfolio in EPY7, the implementation contractor attempted to finish the program year as close to the target savings as possible without exceeding the goal. The target net savings goal was 2,000 MWh and our analysis yielded 1,979 MWh.

This section summarizes the key impact and process findings and recommendations.

Program Volumetric Review.

Finding 1. Much of the program information is collected via hand-written notes and the program data in the tracking system contains some irregularities regarding installations and savings since most of the program data is manually inputted.

Recommendation 1. To improve accuracy, consider switching to a tablet-based data input system used in the field to decrease the number of errors introduced when someone tries to interpret handwritten information.

Marketing and Outreach

Finding 2. School decision makers reported initial “skepticism” upon learning about the program and the top three preferred communication methods about program opportunities reported by school participants were (1) in person advisor, (2) e-mail and (3) telephone call.

Recommendation 2. Since school decision-makers report having skepticism toward energy efficiency programs and similar opportunities, continuing a “high touch” approach like an in-person visit or telephone call or personalized email will likely to continue to be effective. Hosting program information on a ComEd website would also allay school decision makers’ concerns about the legitimacy of the program. Since trade allies may have an existing and trusted relationship with school decision-makers, consider adding them to the outreach strategy.

Process Evaluation.

Finding 3. Participants were highly satisfied with their overall program experience and several offered to provide “peer-to-peer” outreach to better advertise the program and its benefits.

Recommendation 3. If possible, provide a customer survey card or website link to participants upon completion of installations so that those who would like to promote the program have an opportunity to do so.

Verified Gross Impacts and Realization Rate

Finding 4. The tracking system did not include demand reduction savings.

Recommendation 4. Include ex ante demand reduction savings calculations in the tracking system.

Finding 5. The program realization rate is 92 percent due to adjustments made for hours of school operation by category, waste heat factors for energy by school category and adjustments made to wattages of Mercury Vapor, Metal Halide and High Pressure Sodium bulb measures.

Recommendation 5. Use these adjustments to better reflect TRM values within school categories.

Program Participation

Finding 6. Most of the schools that agreed to have an assessment performed also agreed to have direct energy efficient lighting installations performed.

Recommendation 6. Continue to encourage schools to have their facilities assessed for energy use. Consider using the fact that most schools, upon learning about their energy use, decide to participate in the program.

Verification and Due Diligence Review

Finding 7. The program is designed and implemented using nationally recognized best practices with a few exceptions. Although the field manager with the implementation contractor conducted random inspections and spot-checking during the installations as well as performed a final inspection at each facility, there was no true “third party” performing quality control and quality assurance.

Recommendation 7. Consider adding a “third-party inspection” for five percent of the installed projects.

Verified Net Impacts

Finding 8. The Net-to-Gross Ratio (NTGR) found in this evaluation is 0.95, with low free-ridership of 0.05 and a small, unquantifiable amount of spillover.

Recommendation 8. Use this NTGR for future program years, unless the SSP is changed substantially.

Tracking System

Finding 9. The tracking system contains sufficient information to successfully implement the program, with suggested modifications.

Recommendation 9. Consider adding fields to capture the HVAC information collected during the audits if HVAC measures will continue to be included in the program with a co-pay for the schools.

Finding 10. Since ComEd account numbers are part of the customer’s information and considered sensitive, Navigant used the last four digits of the customer’s phone number to describe projects in our write-up.

Recommendation 10. Consider using a unique numbering system for projects that will not compromise customer privacy.

Engineering Desk Review

Finding 11. Some projects in the engineering desk review did not have itemized invoices so we could not verify that the savings attributed to measures matched the “as-installed” configuration.

Recommendation 11. To improve accuracy, consider requiring installation contractors to submit itemized invoices.

7. Appendix

7.1 Evaluation Research Impact Approaches and Findings

7.1.1 Detailed Information from Engineering Desk Review

As part of our ex-ante savings review, the evaluation team reviewed project documentation files for 15 projects that were randomly selected. Navigant reviewed information included in the project files and compared entries in the project files to corresponding entries in the program tracking database for accuracy and completeness. Results and details from the desk review are contained in the “Verification, Due Diligence and Tracking System memo” to ComEd on July 28, 2014 and summarized here. The review indicated that the measures installed by the program were eligible based on the type of existing equipment and type of energy efficient equipment directly installed. One issue identified in the July Verification, Due Diligence and Tracking System memo had been addressed by the implementation contractor:

“In six schools, the quantity and type of measures were consistent across the database and the summary form, but the savings for each measure was not consistent across the database and summary form. These mismatched savings were a result of a formula error in the tracking system that produced the summary forms for the schools. The error resulted in slightly different savings being reported to the school in the summary form. Once the error was caught, it was corrected in the database. All final reported savings are accurate.”⁸

Upon completing their installation, the installation contractor sends the implementation contractor the “as-installed” work order with notes and initials, as well as a final invoice with the “as-installed” configuration of measures. For nine of the 15 schools, the installer’s invoice matched the final work order with the installer’s initials. There was no itemized invoice submitted for three schools. For the other three schools:

- School #2 had some apparent discrepancies in the quantity of (2) bulb fixtures and (4) bulb fixtures
- School #3 it was unclear if the last five fixtures with the description “1 fixture T8 Ballast & 2 Bulb” on the invoice was matched with five U-bulb fixtures on the work order
- School #4 it was unclear if two of the “1 fixture T8 ballast & 2 Bulb” on the invoice was matched to two U-bulbs on the work order.

Following the installation, the implementation contractor sent the school a “Completed Project Summary” report. For eight of the 15 schools, the “completed project summary” measures matched the number and type of measures in the invoice. Some of the other schools’ information could have included typos due to the interpretation of hand-written information. For the other seven schools:

⁸ Email from Daniel Snyder, Senior Energy Efficiency Analyst, ComEd, September 26, 2014.

- School #1 listed 50W on the invoice for the LED wallpack and the summary report lists 60W;
- School #2 listed a quantity of 44 (2) bulb fixtures on the invoice and the summary report lists 45;
- School #3 listed a quantity of 32 (2) bulb fixtures on the invoice and the summary report lists 27, and a quantity of 76 (4) bulb fixtures on the invoice and the summary report lists 78;
- School #4 listed a quantity of 24 (2) bulb fixtures on the invoice and the summary report lists 23;
- School #7 did not have an itemized invoice;
- School #8 did not have an itemized invoice; and
- School #15 did not have an itemized invoice.

7.1.2 Detailed Evaluation Research Gross Impact Findings

The tracking system provided the information about the names of different schools that participated in the program, the baseline and retrofit measures for each school, ex-ante gross energy savings (kWh), the invoice amount and the ComEd invoice number. Navigant used IL TRM (Final Technical Version August 20, 2012) to verify the baseline and retrofit measures in order to calculate the verified savings and realization rates.

Table 7-1 lists energy efficient measures by measure count.

The verified savings in Table 7-2 were obtained by multiplying per unit measure savings values with the measure quantities from the tracking system.

The verified savings in Table 7-3 shows ex-ante, verified energy savings and realization rates by school.

Table 7-1. Energy Efficient Measures and Measure Counts

Measure	Number of Lamps	Unit	Measure Count
CFLs			
13W CFL	1		271
18W CFL	1		544
18W CFL	2		6
23W CFL	1	Bulb	317
40W CFL	1		4
85W CFL	1		17
LEDs			
7W LED	1		91
23W LED	1		3
5W LED	1		40
9W LED	1		83
10W LED	2	Bulb	27
40W LED Wallpack	1		76
60W LED Wallpack	1		21
LED Exit Sign			368
LED White			4
T8 U-Bulb			
24" T8 25W U-Bulb	2		6
24" 25W T8 U-Bulb Fluorescent	2	Fixture	467
24" 32W T8 U-Bulb Fluorescent	2		24
25W T8 Fluorescent			
36" 25W T8 Fluorescent	1		2
36" 25W T8 Fluorescent	4		12
48" 25W T8 Fluorescent	1	Fixture	57
48" 25W T8 Fluorescent	2		2,873
48" 25W T8 Fluorescent	3		931
48" 25W T8 Fluorescent	4		1,701
28W T8 Fluorescent			
36" 28W T8 Fluorescent	1	Fixture	1

Measure	Number of Lamps	Unit	Measure Count
48" 28W T8 Fluorescent	1		21
48" 28W T8 Fluorescent	2		456
48" 28W T8 Fluorescent	3		154
48" 28W T8 Fluorescent	4		739
32W T8 Fluorescent			
48" 32W T8 Fluorescent	2	Fixture	262
48" 32W T8 Fluorescent	4		2
59W T8 Fluorescent			
96" 59W T8 Fluorescent	2	Fixture	519
54W T5 Fluorescent			
46" 54W T5 Fluorescent	6	Fixture	68
Occupancy Sensors			
Ceiling mounted			4
Fixture mounted		Unit	66
Wall mounted			540
Total	NA		10,777

Source: Navigant analysis, Tracking database

Table 7-2. Verified Gross Savings By Measure

Measure	Number of Lamps	Verified Gross Savings (kWh)	Verified Gross Peak Demand Reduction (kW)	Method	Source (IL TRM)
CFLs					
13W CFL	1	25,068	2.29	Deemed	Sec 4.5.1, p 214
18W CFL	1	64,513	5.92		
18W CFL	2	1,367	0.11		
23W CFL	1	50,101	4.44		
40W CFL	1	1,259	0.07		
85W CFL	1	9,910	0.83		
LEDs					
17W LED	1	44,436	3.27	Deemed	Sec 4.5.2, p 221
23W LED	1	464	0.05		
5W LED	1	3,691	0.32		
9W LED	1	11,002	1.10		

Measure	Number of Lamps	Verified Gross Savings (kWh)	Verified Gross Peak Demand Reduction (kW)	Method	Source (IL TRM)
10W LED	2	19,375	2.21		
40W LED Wallpack	1	63,828	0.00		
60W LED Wallpack	1	31,511	0.00		
LED Exit Sign		129,573	13.58	Deemed	Sec 4.5.7, p 479
LED White		1,626	0.16		
T8 U-Bulb					
24" T8 25W U-Bulb	2	371	0.02	Deemed	Sec 4.5.3, p 233
24" 25W T8 U-Bulb Fluorescent	2	29,551	1.99		
24" 32W T8 U-Bulb Fluorescent	2	703	0.07	Deemed	Sec 4.5.3, p 233
25W T8 Fluorescent					
36" 25W T8 Fluorescent	1	223	0.02	Deemed	Sec 4.5.3, p 233
36" 25W T8 Fluorescent	4	3,943	0.22		
48" 25W T8 Fluorescent	1	4,167	0.37	Deemed	Sec 4.5.3, p 233
48" 25W T8 Fluorescent	2	453,378	28.69		
48" 25W T8 Fluorescent	3	160,190	9.33		
48" 25W T8 Fluorescent	4	303,681	20.55		
28W T8 Fluorescent					
36" 28W T8 Fluorescent	1	103	0.01	Deemed	Sec 4.5.3, p 233
48" 28W T8 Fluorescent	1	1,937	0.06	Deemed	Sec 4.5.3, p 233
48" 28W T8 Fluorescent	2	41,895	2.95		
48" 28W T8 Fluorescent	3	23,871	1.86		
48" 28W T8 Fluorescent	4	197,429	13.29		
32W T8 Fluorescent					
48" 32W T8 Fluorescent	2	35,510	1.97	Deemed	Sec 4.5.3, p 233
48" 32W T8 Fluorescent	4	575	0.03		
59W T8 Fluorescent					
96" 59W T8 Fluorescent	2	59,184	4.07	Deemed	Sec 4.5.3, p 233
54W T5 Fluorescent					
46" 54W T5 Fluorescent	6	23,027	1.51	Deemed	Sec 4.5.4, p 246
Occupancy Sensors					
Ceiling mounted		3,467	0.17	Deemed	Sec 4.5.5, p 257
Fixture mounted		5,572	0.36		
Wall mounted		276,399	14.57		
Total	NA	2,082,896	136.49		

Source: Navigant analysis

Table 7-3. Ex-Ante, Verified Energy Savings, Peak Demand Reduction, and Realization Rates by School

School Number	School Type	Ex-Ante Savings (kWh)	Verified Savings (kWh)	Verified Peak Demand Reduction (kW)	Energy Realization Rate
1	Child Care/Preschool	19,170	16,317	1.04	85%
2	Child Care/Preschool	28,610	24,018	1.57	84%
3	Child Care/Preschool	22,560	19,087	1.25	85%
4	Child Care/Preschool	10,522	9,159	0.57	87%
5	Child Care/Preschool	23,510	20,149	1.36	86%
6	Elementary	16,544	10,740	1.03	65%
7	Child Care/Preschool	20,711	16,268	0.93	79%
8	Child Care/Preschool	34,208	28,830	1.89	84%
9	Elementary/Middle	71,257	83,174	4.46	117%
10	Elementary/Middle	58,451	58,487	3.52	100%
11	Child Care/Preschool	22,356	19,901	1.09	89%
12	Child Care/Preschool	9,175	7,489	0.55	82%
13	Child Care/Preschool	13,783	11,576	0.74	84%
14	Elementary	47,500	39,064	2.66	82%
15	Child Care/Preschool	24,111	20,116	1.21	83%
16	Elementary	40,029	33,078	3.72	83%
17	Elementary/Middle	19,325	21,526	1.17	111%
18	Elementary/Middle	41,484	41,361	2.36	100%
19	Child Care/Preschool	30,331	26,372	1.84	87%
20	Child Care/Preschool	35,572	30,417	1.90	86%
21	Child Care/Preschool	33,253	29,042	1.76	87%
22	Elementary	25,483	18,198	1.66	71%
23	Child Care/Preschool	16,262	14,075	0.98	87%
24	Elementary	60,211	43,673	4.28	73%
25	Elementary	11,730	8,941	0.89	76%
26	Elementary/Middle	54,394	54,968	2.86	101%
27	Elementary	24,788	17,641	1.76	71%
28	Elementary/Middle	67,629	63,629	4.23	94%
29	Elementary	65,334	48,946	4.84	75%
30	Elementary	11,397	9,188	0.95	81%
31	Child Care/Preschool	17,702	15,563	1.08	88%
32	Elementary	21,661	16,136	1.63	74%
33	Elementary	54,687	42,285	4.37	77%
34	Child Care/Preschool	39,278	33,799	2.38	86%
35	Child Care/Preschool	24,701	21,497	1.63	87%
36	Child Care/Preschool	81,164	71,133	4.85	88%
37	Elementary	17,347	11,078	1.03	64%

School Number	School Type	Ex-Ante Savings (kWh)	Verified Savings (kWh)	Verified Peak Demand Reduction (kW)	Energy Realization Rate
38	Elementary	5,721	4,966	0.57	87%
39	Child Care/Preschool	10,378	9,741	0.45	94%
40	Child Care/Preschool	2,670	2,285	0.15	86%
41	Preschool/Kindergarten	13,634	12,517	1.00	92%
42	Preschool/Kindergarten	29,342	26,994	2.24	92%
43	Child Care/Preschool	12,842	10,976	0.74	85%
44	Child Care/Preschool	29,029	24,432	1.54	84%
45	Child Care/Preschool	5,492	4,730	0.29	86%
46	High/Middle	107,977	140,601	2.95	130%
47	Elementary	19,620	17,543	1.91	89%
48	Elementary	5,879	4,527	0.48	77%
49	Elementary	56,967	48,966	4.15	86%
50	Child Care/Preschool	16,120	14,555	0.86	90%
51	High/Middle	62,302	78,665	2.54	126%
52	Child Care/Preschool	13,357	11,387	0.75	85%
53	Elementary	27,389	21,792	2.27	80%
54	Elementary	10,197	7,271	0.69	71%
55	Child Care/Preschool	17,737	14,108	0.95	80%
56	Elementary/Middle	55,128	56,600	3.16	103%
57	Elementary/Middle	11,083	9,621	0.61	87%
58	Preschool/Kindergarten	14,171	11,942	0.78	84%
59	Child Care/Preschool	37,331	31,170	2.00	83%
60	Elementary/Middle	76,859	75,433	4.42	98%
61	Preschool/Kindergarten	36,594	31,112	2.11	85%
62	Preschool/Kindergarten	22,734	21,247	1.20	93%
63	Elementary	9,301	6,365	0.67	68%
64	Elementary/Middle	24,037	24,045	1.72	100%
65	Elementary	43,164	32,420	3.04	75%
66	Elementary/Middle	78,673	78,360	4.34	100%
67	Elementary	16,460	13,027	1.35	79%
68	Elementary	15,866	12,007	1.04	76%
69	Elementary	35,586	25,949	2.58	73%
70	Elementary	9,872	7,711	0.64	78%
71	Preschool/Kindergarten	11,945	9,423	0.62	79%
72	Child Care/Preschool	22,011	18,719	1.22	85%
73	Child Care/Preschool	4,214	4,070	0.25	97%
74	High/Middle	83,593	100,693	4.18	120%
Total		2,271,505	2,082,896	136.49	92%

Source: Navigant analysis

7.1.3 Evaluation Research Net Impact Findings

7.1.3.1 Free-ridership

Free-ridership was assessed using a customer self-report approach following a framework that was developed for evaluating net savings of California’s 2006-2008 non-residential energy efficiency programs. Calculating free ridership using data collected during participant telephone surveys concerns the following three items:

- A Timing and Selection score that reflects the influence of the most important various program and program-related elements on the customer’s decision to implement the specific program measure at this time.
- A Program Influence score that reveals the perceived importance of the program (whether rebate, recommendation, or other program intervention) relative to non-program factors in the customer’s decision to implement the specific program measure. This score is cut in half if the customer learned about the program after they decided to implement the measures.
- A No-Program score that captures the likelihood of various actions the customer might have taken at this time and in the future if the program had not been available. This score accounts for deferred free ridership by incorporating the likelihood that the customer would have installed program-qualifying measures at a later date if the program had not been available.

Each of these scores represents the highest response or the average of several responses given to one or more questions about the decision to install a program measure. The rationale for using the maximum value is to capture the most important element in the participant’s decision-making process.

Free ridership cannot be measured directly due to the lack of empirical data regarding the counterfactual situation (i.e., what would have occurred in the hypothetical, “no program” alternate reality). Thus, free-ridership is assessed as a probability score for each measure. The evaluation relies on self-reported data collected during participant telephone surveys to assign free-ridership probability scores to each measure. The evaluation team asked the following questions to each program participant:

FR1. Were you thinking of implementing any of the measures installed at no cost before you heard about the Sustainable Schools Program?

FR2. When were you planning to install this measure?

FR3. How likely was the participant to install the measure if they had not installed it through the program? (0-10 scale probability)

FR4. How important was the program in the decision to install the measure? (0-10 scale)

The free-ridership data were assembled into a probability score in a step-by-step fashion, applying the following algorithm:

- If the customer had not considered the measure prior to participating in the program then the probability of free-ridership is estimated to be zero (based on question FR1 above).

- Similarly, if the customer did not have specific plans to install the program measure prior to participation, and the self-reported probability of installing the measure was less than or equal to 3 (on a 0-10 scale) then the probability of free-ridership is estimated to be zero (FR1 and FR3).
- If the customer had plans to install the measures in the absence of the program, but indicated that the program accelerated installation by at least two years, then the probability of free-ridership is estimated to be zero (based on FR2).

If none of the above three criteria holds, then the responses to questions FR3 and FR4 are used to calculate the probability of free-ridership. The corresponding formula for calculating free-ridership is shown below:

Self-Report Free-ridership Algorithm

Free ridership = [Average (Likelihood,10-Importance)]/10

Navigant estimated the free ridership to be 0.05.

7.1.3.2 Spillover

Spillover refers to additional energy efficient measures participants adopted due to program influences, but without any financial assistance from the program. Survey free-ridership questions were followed by questions designed to estimate spillover. These questions asked about recent purchases of any additional energy-efficient measures that were made without any additional financial assistance from the program.. Below are examples of the spillover questions:

- Did you install any additional energy efficient equipment since participating in the program?
- What have you installed?
- How many additional measures have you installed?
- Why did you not receive an incentive for this measure?
- Why did you not install this measure through the utility program?
- Was the additional measure that you purchased and installed eligible for a residential rebate?
- How significant was your experience with the program in your decision to install the additional measure? Please rate this on a 0-10 scale, where 0 means not at all significant and 10 means very significant.
- If you had not participated in the program, how likely is it that your school would still have implemented this measure? Please rate this on a 0-10 scale, where 0 means not at all likely and 10 means very likely.

From the participant surveys, there was only one instance of spillover where a participant had replaced a portion of their heating system; however the spillover could not be quantified because the details of the type of heating system replacement were not available. The evaluation team used responses to the spillover questions to assess whether spillover may be occurring due to changes in behavior; however the responses did not offer enough detail to quantify the spillover.

7.2 Participant Survey

INPUTS TO BE MANUALLY ADDED TO EACH SURVEY:

SCHOOL NAME
 SCHOOL ADDRESS
 SCHOOL CONTACT'S NAME
 PHONE NUMBER OF SCHOOL CONTACT
 INSTALLED MEASURES AND QUANTITIES

COMED SUSTAINABLE SCHOOLS PROGRAM PARTICIPANT SURVEY EPY6 DRAFT (4/15/2014)

Table 1: SUSTAINABLE SCHOOLS PROGRAM TOPICS

Topics	Research Questions
Measure Modules: Measures	<ul style="list-style-type: none"> • Impact Direct Install Measure issues • Persistence • Hours of use
Net-to-Gross	<ul style="list-style-type: none"> • Would the customer have installed the energy efficient equipment without the program?
Spillover Module	<ul style="list-style-type: none"> • Did the Sustainable Schools Program encourage the customer to install energy efficient equipment without an incentive? Why?
Process Module	<ul style="list-style-type: none"> • Satisfaction • Marketing and Outreach • Benefits and Barriers • Feedback and Recommendations
Schoolographics Model	<ul style="list-style-type: none"> • Ownership • Type of School • Age of School • Number of students, faculty and staff

INTRODUCTION

Hello, this is _____ from Navigant calling on behalf of ComEd. *This is not a sales call.* May I please speak with < SCHOOL CONTACT'S NAME >?

Our records show that Willdan Energy Solutions installed energy efficient measures through the Sustainable Schools Program sponsored by ComEd. We are calling to do a follow-up study about your participation in this program. I was told you're the person most knowledgeable about this project. Is this correct? [IF NOT, ASK TO BE TRANSFERRED TO MOST KNOWLEDGABLE PERSON OR RECORD NAME & NUMBER.]

This survey will take about 30 minutes. Is now still a good time? [If no, schedule call-back]

IF THEY HAVE ALREADY BEEN SURVEYED FOR THE COMED CUSTOMER SATISFACTION EXPLAIN THAT WE UNDERSTAND THAT IT IS AN INCONVENIENCE BUT OUR SURVEY IS FOR A DIFFERENT PURPOSE (OR SOMETHING LIKE THIS)

An energy assessment was completed, an assessment report was created and some equipment was installed at no cost to you.

- 1 Yes, participated as described
- 2 Yes, participated but at another location
- 3 NO, did NOT participate in program [if this is answered, go to A2]
- 00 Other, specify [if this is answered, go to A2]
- 98 Don't know [if this is answered, go to A2]
- 99 Refused [if this is answered, go to A2]

[SKIP A2 IF A1=1, 2]

A2. Is it possible that someone else dealt with the energy-efficient product installation?

- 1 Yes, someone else dealt with it
- 2 No
- 00 Other, specify
- 98 Don't know
- 99 Refused

[IF A2=1, ask to be transferred to that person. If not available, thank and terminate. If available, go back to A1]

[IF A1=2,3,00,98,99: Thank and terminate. Record disposition as "Could not confirm participation".]

Before we begin, I want to emphasize that this survey will only be about the energy saving products and services received through the Sustainable Schools Program at your school.

Direct Install Measures

QA0. Were you present when your school was visited by an Energy Advisor from the Sustainable Schools Program who conducted an assessment of your facility's energy saving opportunities?

- 1. Yes
- 2. No
- 8. (Don't know)
- 9. (Refused)

QA1. I am going to read a list of energy saving products that our records indicate were installed in your facility or building. Please confirm which of the following were installed during the energy assessment.

[GO TO SEPARATE SPREADSHEET]

[CALCULATE VERIFIED QUANTITY AND VERIFIED MEASURE FLAG FOR EACH MEASURE VIA SEPARATE SPREAD SHEET]

- QA2. Are all of the products still installed in their original locations?
1. Yes
 2. No
 98. Don't know
 99. Refused

[IF QA2=2 Ask QA2a, ELSE SKIP TO LH1A]

QA2a. Which products are not installed in their original locations?

[RECORD VERBATIM]

QA2a1 . FIRST MEASURE

QA2a2.SECOND MEASURE [IF NECESSARY]

QA2a3. THIRD MEASURE [IF NECESSARY]

QA2a4. FOURTH MEASURE [IF NECESSARY]

QA2a5. FIFTH MEASURE [IF NECESSARY]

QA2a6. SIXTH MEASURE [IF NECESSARY]

For each measure mentioned in QA2a, ask QA3-QA6

QA3A. How many of the FIRST MEASURE were removed from their original locations (PLEASE PROBE FOR A SPECIFIC NUMBER.) (INTERVIEWER NOTE: QUANTITY REMOVED CAN NOT EXCEED THE QUANTITY INSTALLED.)

QA4A. If the FIRST MEASURE (is/are) NOT installed at original location, what happened to them? (Interviewer: read list and record one response). Was it...

01. Installed at some other location in the facility
02. In storage
03. Sold or given away, or
04. Thrown away
00. (Other, specify) [RECORD VERBATIM]
98. (Don't know)
99. (Refused)

QA5A. Why were the FIRST MEASURE moved from their original locations? (*Record/answer all that apply*)

- 01. (Equipment failed)
- 02. (Didn't work properly)
- 03. (Not bright enough)
- 04. (Too bright)
- 05. (Didn't like the color)
- 06. (Didn't like the appearance/unattractive)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA6A. What did you replace the FIRST MEASURE with? (*Record/answer all that apply*)

- 01. (With a new high efficiency device)
- 02. (With a less efficient device)
- 03. (Re-installed old equipment)
- 04. (Did not replace)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

[ASK QA3b-QA6b IF QA2A2=SECOND MEASURE, ELSE SKIP TO LH1A]

QA3b. How many of the SECOND MEASURE were removed from their original locations (PLEASE PROBE FOR A SPECIFIC NUMBER.) (INTERVIEWER NOTE: QUANTITY REMOVED CAN NOT EXCEED THE QUANTITY INSTALLED.)

QA4b. If the device(s) is NOT installed at original location, what happened to the device? (*Interviewer: read list and record one response*). Was it...

- 01. Installed at some other location in the facility
- 02. In storage
- 03. Sold or given away, or
- 04. Thrown away
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA5b. Why were the devices moved from their original locations? (*Record/answer all that apply*)

- 01. (Equipment failed)
- 02. (Didn't work properly)
- 03. (Not bright enough)
- 04. (Too bright)
- 05. (Didn't like the color)
- 06. (Didn't like the appearance/unattractive)

- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA6b. What did you replace the device with? (*Record/answer all that apply*)

- 01. (With a new high efficiency device)
- 02. (With a less efficient device)
- 03. (Re-installed old equipment)
- 04. (Did not replace)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

[ASK QA3c-QA6c IF QA2A=THIRD MEASURE, ELSE SKIP TO LH1A]

QA3c. How many of the THIRD MEASURE were removed from their original locations (PLEASE PROBE FOR A SPECIFIC NUMBER.) (INTERVIEWER NOTE: QUANTITY REMOVED CAN NOT EXCEED THE QUANTITY INSTALLED.)

QA4c. If the device(s) is NOT installed at original location, what happened to the device? (*Interviewer: read list and record one response*). Was it...

- 01. Installed at some other location in the facility
- 02. In storage
- 03. Sold or given away, or
- 04. Thrown away
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA5c. Why were the devices moved from their original locations? (*Record/answer all that apply*)

- 01. (Equipment failed)
- 02. (Didn't work properly)
- 03. (Not bright enough)
- 04. (Too bright)
- 05. (Didn't like the color)
- 06. (Didn't like the appearance/unattractive)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA6c. What did you replace the device with? (*Record/answer all that apply*)

- 01. (With a new high efficiency device)
- 02. (With a less efficient device)
- 03. (Re-installed old equipment)
- 04. (Did not replace)

- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

[ASK QA3d-QA6d IF QA2A=FOURTH MEASURE, ELSE SKIP TO LH1A]

QA3d. How many of the FOURTH MEASURE were removed from their original locations (PLEASE PROBE FOR A SPECIFIC NUMBER.) (INTERVIEWER NOTE: QUANTITY REMOVED CAN NOT EXCEED THE QUANTITY INSTALLED.)

QA4d. If the device(s) is NOT installed at original location, what happened to the device? (*Interviewer: read list and record one response*). Was it...

- 01. Installed at some other location in the facility
- 02. In storage
- 03. Sold or given away, or
- 04. Thrown away
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA5d. Why were the devices moved from their original locations? (*Record/answer all that apply*)

- 01. (Equipment failed)
- 02. (Didn't work properly)
- 03. (Not bright enough)
- 04. (Too bright)
- 05. (Didn't like the color)
- 06. (Didn't like the appearance/unattractive)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA6d. What did you replace the device with? (*Record/answer all that apply*)

- 01. (With a new high efficiency device)
- 02. (With a less efficient device)
- 03. (Re-installed old equipment)
- 04. (Did not replace)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

[ASK QA3e-QA6e IF QA2A=FIFTH MEASURE, ELSE SKIP TO LH1A]

QA3e. How many of the FIFTH MEASURE were removed from their original locations (PLEASE PROBE FOR A SPECIFIC NUMBER.) (INTERVIEWER NOTE: QUANTITY REMOVED CAN NOT EXCEED THE QUANTITY INSTALLED.)

QA4e. If the device(s) is NOT installed at original location, what happened to the device? (*Interviewer: read list and record one response*). Was it...

- 01. Installed at some other location in the facility
- 02. In storage
- 03. Sold or given away, or
- 04. Thrown away
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA5e. Why were the devices moved from their original locations? (*Record/answer all that apply*)

- 01. (Equipment failed)
- 02. (Didn't work properly)
- 03. (Not bright enough)
- 04. (Too bright)
- 05. (Didn't like the color)
- 06. (Didn't like the appearance/unattractive)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA6e. What did you replace the device with? (*Record/answer all that apply*)

- 01. (With a new high efficiency device)
- 02. (With a less efficient device)
- 03. (Re-installed old equipment)
- 04. (Did not replace)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

[ASK QA3f-QA6f IF QA2A=SIXTH MEASURE, ELSE SKIP TO LH1A]

QA3f. How many of the SIXTH MEASURE were removed from their original locations (PLEASE PROBE FOR A SPECIFIC NUMBER.) (INTERVIEWER NOTE: QUANTITY REMOVED CAN NOT EXCEED THE QUANTITY INSTALLED.)

QA4f. If the device(s) is NOT installed at original location, what happened to the device? (*Interviewer: read list and record one response*). Was it...

- 01. Installed at some other location in the facility
- 02. In storage

- 03. Sold or given away, or
- 04. Thrown away
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA5f. Why were the devices moved from their original locations? (*Record/answer all that apply*)

- 01. (Equipment failed)
- 02. (Didn't work properly)
- 03. (Not bright enough)
- 04. (Too bright)
- 05. (Didn't like the color)
- 06. (Didn't like the appearance/unattractive)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

QA6f. What did you replace the device with? (*Record/answer all that apply*)

- 01. (With a new high efficiency device)
- 02. (With a less efficient device)
- 03. (Re-installed old equipment)
- 04. (Did not replace)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

HOURS OF USE – LIGHTING

Now we'd like to talk about the hours that your interior lighting equipment is in operation.

LH1a Are you typically open every weekday, Monday through Friday?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

[ASK LH1b IF LH1a=2]

LH1b How many days are you typically CLOSED Monday through Friday?

- 1 (One)
- 2 (Two)
- 3 (Three)
- 4 (Four)
- 5 (Five)
- 8 (Don't know)

9 (Refused)

[IF LH1b=5, SKIP TO LH4]

LH2 At what time do your indoor lights currently turn on during weekdays (Monday - Friday)?
(Enter 2400 for 24-hour operation, enter 0 for never on)

LH2a Enter hours and minutes, e.g., 0530 for 5:30

LH2b 1. AM
2. PM

[SKIP LH3 IF LH2=24hr or never]

LH3 At what time do your indoor lights currently turn off during weekdays (Monday - Friday)?
(Enter 2400 for 24-hour operation, enter 0 for never on)

LH3a Enter hours and minutes, e.g., 0530 for 5:30

LH3b 1. AM
2. PM

LH4 Does the lighting equipment operate on a different schedule on weekends (Saturday and Sunday)?

1 Yes
2 No
8 Don't know
9 Refused

[ASK IF LH4=1, ELSE SKIP TO LH9]

LH5 On Saturdays, at what time does the indoor lighting equipment turn-on? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH5a Enter hours and minutes, e.g., 0530 for 5:30

LH5b 1. AM
2. PM

[SKIP LH6 IF LH5=24hr or never]

LH6 And when does the indoor lighting equipment turn off on Saturdays? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH6a Enter hours and minutes, e.g., 0530 for 5:30

LH6b 1. AM
2. PM

LH7 And on Sundays, at what time does the indoor lighting equipment turn on? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH7a Enter hours and minutes, e.g., 0530 for 5:30

LH7b 1. AM
2. PM

[SKIP LH8 IF LH7=24hr or never]

LH8 And when does the indoor lighting equipment turn off on Sundays? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH8a Enter hours and minutes, e.g., 0530 for 5:30

LH8b 1. AM
2. PM

LH9a During hours when your school is OPEN, approximately what percentage of the indoor lights are kept on? [NUMERIC OPEN END, 0 TO 100; 998=DON'T KNOW, 999=REFUSED]

[SKIP LH9b IF LH1a=1 AND LH2a = 2400 AND LH4 = 2] (Business is open 24/7)

LH9b During hours when your school is CLOSED, approximately what percentage of the indoor lights are kept on? [NUMERIC OPEN END, 0 to 100; 998=Don't know, 999=Refused]

LH10a Are there any months during the year when the operating schedule for the indoor lighting differs significantly from what you just described?

1 Yes
2 No
8 Don't know
9 Refused

[ASK LH10b-e IF LH10a=1; ELSE SKIP TO NTG MODULE]

LH10b How many hours per day does your indoor lighting typically operate during the periods with different operating schedules?

[NUMERIC OPEN END, 0 TO 24; 98=DON'T KNOW, 99=REFUSED]

LH10c And how many days per week?

[NUMERIC OPEN END, 0 TO 7; 8=DON'T KNOW, 9=REFUSED]

LH10d How many months per year does the lighting run on the alternative schedule? [NUMERIC OPEN END, 0 TO 12; 98=DON'T KNOW, 99=REFUSED]

LH10e During hours when your school is OPEN, on the alternative schedule, approximately what percentage of the indoor lighting is kept on? [NUMERIC OPEN END, 0 TO 100; 998=DON'T KNOW, 999=REFUSED]

[SKIP LH10f IF LH10b = 24]

LH10f During hours when your school is CLOSED on the alternative schedule, approximately what percentage of the indoor lights are kept on? [NUMERIC OPEN END, 0 to 100; 998=Don't know, 999=Refused]

PY1/4 NET-TO-GROSS MODULE VARIABLES

Variables for the net-to-gross module:

<NTG> (B=Basic rigor level, S= Standard rigor level. All questions here are asked if the standard rigor level is designated. Basic rigor level is designated through skip patterns)

<UTILITY> (ComEd/Nicor or ComEd/Integrays)

<PROGRAM> (Name of energy efficiency program)

<ENDUSE> (Type of measure installed; from program tracking dataset)

<OTHERPTS> (Variable to be calculated based on responses. Equals 1- minus response to N3p.)

<MSAME> (Equals 1 if same customer had more than one project of the same end-use type; from program tracking database)

<NSAME> (Number of additional projects of the same end-use type implemented by the same customer; from program tracking database)

<FSAME> (Equals 1 if same customer also had the same measures installed at a different facility; from program tracking database)

<FDESC> (Type of end-use of a different measure type at the same facility; from program tracking database)

DIRECT INSTALL NET-TO-GROSS BATTERY

I'd now like to ask a few questions about the measures installed.

DIN1 Were you thinking of implementing any of the measures installed at no cost before you heard about the Sustainable Schools Program?

DIN2 Which measures were you planning to install yourself and how many?

[RECORD VERBATIM]

DIN2a FIRST MEASURE

DIN2b SECOND MEASURE [IF NECESSARY]

DIN2c THIRD MEASURE [IF NECESSARY]

DIN2d FOURTH MEASURE [IF NECESSARY]

DIN2e FIFTH MEASURE [IF NECESSARY]

DIN2f SIXTH MEASURE [IF NECESSARY]

ASK FOR EACH MEASURE RESPONDENT WAS PLANNING TO INSTALL.

DIN3 When were you planning to install these measures?

- 1 Within 6 months?
- 2 6 months to 1 year later
- 3 1 - 2 years later

- 4 2 - 3 years later
- 5 3 - 4 years later
- 6 4 or more years later
- 8 Don't know
- 9 Refused

N3 Next, I'm going to ask you to rate the importance of the Sustainable Schools program as well as other factors that might have influenced your decision to install these measures. The scale of importance is 0 to 10, where 0 means not at all important and 10 means extremely important. Now using this scale please rate the importance of each of the following in your decision to implement these measures at this time. [FOR N3a-n, RECORD 0 to 10; 96=Not Applicable; 98=Don't Know; 99=Refused]

(If needed: How important in your DECISION to implement the project was...)

- N3a. Availability of the no cost lighting measures
- N3b. Recommendation from the Willdan Energy Solutions advisor
- N3c. Information from marketing materials
- N3d. Information in the assessment report

N3e. Were there any other factors we haven't discussed that were important in your decision to install these measures?

- 00 [Record verbatim]
- 96 Nothing else was important
- 98 Don't Know
- 99 Refused

[ASK N3e1 IF N3e=00]

N3e1. Using the same zero to 10 scale, how would you rate the influence of this factor? [RECORD 0 to 10; 98=Don't Know; 99=Refused]

Now I would like you to think about the action you would have taken with regard to the installation of this equipment if the utility program had not been available.

N5 Using a likelihood scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely", if the Sustainable Schools program had not been available, what is the likelihood that you would have installed exactly the same equipment? [RECORD 0 to 10; 98= Don't know; 99=Refused]

CONSISTENCY CHECKS

[ASK IF N5>0, ELSE SKIP TO SPILLOVER]

N7 You indicated earlier that there was a <N5 RESPONSE> in 10 likelihood that you would have installed the same equipment if the program had not been available. Without the program, when do you think you would have installed this equipment? Would you say...

- 1 At the same time

- 2 Earlier
- 3 Later
- 4 Never
- 8 Don't know
- 9 Refused

[ASK N7a IF N7=3]

N7a. How much later would you have installed this equipment? Would you say...

- 1 Within 6 months?
- 2 6 months to 1 year later
- 3 1 - 2 years later
- 4 2 - 3 years later
- 5 3 - 4 years later
- 6 4 or more years later
- 8 Don't know
- 9 Refused

[ASK N7b IF N7a=6]

N7b. Why do you think it would have been 4 or more years later?

- 00 [Record VERBATIM]
- 98 (Don't know)
- 99 (Refused)

DI PY6 SPILLOVER MODULE

Thank you for discussing the new lighting measures that you installed through the Sustainable Schools. Next, I would like to discuss any energy efficient equipment you might have installed OUTSIDE of the Sustainable Schools program.

SP1 Since your participation in the ComEd program, did you implement any ADDITIONAL energy efficiency measures at this facility or at your other facilities within ComEd's service territory that did NOT receive incentives through any utility or government program?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

[ASK SP2-SP7i IF SP1=1, ELSE SKIP TO S0]

SP2 What was the first measure that you implemented? (IF RESPONSE IS GENERAL, E.G., "LIGHTING EQUIPMENT", PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY.)

- 1 Lighting: T8 lamps
- 2 Lighting: T5 lamps

- 3 Lighting: High bay Fixture Replacement
- 4 Lighting: CFLs
- 5 Lighting: Controls / Occupancy sensors
- 6 Lighting: LED lamps
- 7 Cooling: Unitary/Split Air Conditioning System
- 8 HVAC: Packaged Terminal air conditioners or heat pumps
- 9 Cooling: Room air conditioners
- 10 Heating: Furnace
- 11 Heating: Boiler
- 12 Variable Frequency Drives (VFD/VSD) on HVAC Motors
- 13 Programmable Thermostat
- 14 Refrigeration LED Case Lighting
- 15 Refrigeration EC motor for cooler/freezer
- 16 Wall or roof insulation
- 17 New windows
- 18 Water heater
- 00 Other, specify
- 96 Didn't implement any measures
- 98 Don't know
- 99 Refused

[SKIP TO S0 (PROCESS MODULE) IF SP2=96, 98, 99]

SP3 What was the second measure? (IF RESPONSE IS GENERAL, E.G., "LIGHTING EQUIPMENT", PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY.)

- 1 Lighting: T8 lamps
- 2 Lighting: T5 lamps
- 3 Lighting: High Bay Fixture Replacement
- 4 Lighting: CFLs
- 5 Lighting: Controls / Occupancy sensors
- 6 Lighting: LED lamps
- 7 Cooling: Unitary/Split Air Conditioning System
- 8 HVAC: Packaged Terminal air conditioners or heat pumps
- 9 Cooling: Room air conditioners
- 10 Heating: Furnace
- 11 Heating: Boiler
- 12 Variable Frequency Drives (VFD/VSD) on HVAC Motors
- 13 Programmable Thermostat
- 14 Refrigeration LED Case Lighting
- 15 Refrigeration EC motor for cooler/freezer
- 16 Wall or roof insulation
- 17 New windows
- 18 Water heater
- 00 Other, specify
- 96 Didn't implement any measures

98 Don't know

99 Refused

SP4 I have a few questions about the FIRST measure that you installed. (If needed, read back measure: <SP2 RESPONSE>) [OPEN END]

a. Why did you not receive an incentive for this measure?

b. Why did you not install this measure through the utility Program?

c. How many of this measure did you install?

SP5a. How significant was your experience in the ComEd Sustainable Schools Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP5b and SP5c IF SP5a = 98, 99]

SP5b. Why do you give it this rating? [OPEN END]

SP5c. If you had not participated in the ComEd Sustainable Schools program, how likely is it that your school would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP6 IF SP3=96, 98, 99]

SP6 I have a few questions about the SECOND measure that you installed. (If needed, read back measure: <SP3 RESPONSE>) [OPEN END]

a. Why did you not receive an incentive for this measure?

b. Why did you not install this measure through the utility Program?

e. How many of this measure did you install?

SP6a. How significant was your experience in the ComEd Sustainable Schools Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP6b IF SP6a = 98, 99]

SP6b. Why do you give it this rating? [OPEN END]

SP6c. If you had not participated in the ComEd Sustainable Schools Program, how likely is it that your school would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 98=Don't Know; 99=Refused]

PROCESS MODULE

I'd now like to ask you a few general questions about your participation in the Sustainable Schools Program.

Program Processes and Satisfaction

S0 How did you first hear about the Sustainable Schools Program?

1. ComEd Account Manager
2. Program Energy Advisor
4. Contractor/Trade Ally
5. Email
6. Friend/colleague/word of mouth
00. (Other, specify) [RECORD VERBATIM]
98. (Don't know)
99. (Refused)

S1b Who explained the program requirements to you?

1. ComEd Account Manager
2. Program Energy Advisor
3. Contractor/Trade Ally
4. Email
5. Friend/colleague/word of mouth
00. Other, specify [RECORD VERBATIM]
98. Don't know
99. Refused

S1c How would you rate the application process? Please use a scale of 0 to 10 where 0 is "very difficult" and 10 is "very easy". [SCALE 0-10; 98=Don't know, 99=Refused]

[ASK S1d IF S1c<4]

S1d Why did you rate it that way?

1. Difficult to understand
2. Long process
00. Other, specify [RECORD VERBATIM]
98. Don't know
99. Refused

Contractor Relationship

S1e How would you rate the installer's ability to meet your needs in terms of implementing your project? Please use a scale from 0 to 10, where 0 is "not at all able to meet needs" and 10 is "completely able to meet needs"? [SCALE 0-10; 98=Don't know, 99=Refused]

S4a On a scale of 0 to 10, where 0 is very dissatisfied and 10 is very satisfied, how would you rate your overall satisfaction with lighting installer? [SCALE 0-10; 96=not applicable, 98=Don't know, 99=Refused]

S5a Would you recommend this contractor to other people or companies?

1. Yes [GO TO S5 IF S1 =1]
2. No
8. Don't know [GO TO S5 IF S1 =1]
9. Refused [GO TO S5 IF S1 =1]

Ask S5b if S5a=2.

S5b. Why not?

1. Did not complete the work
2. Did not clean-up work area
3. Poor quality work
4. Did not complete in a timely manner
00. Other, specify
98. Don't know
99. Refused

S8 During the course of your participation in the program, did you place any calls to the ComEd call center?

1. Yes
2. No
8. Don't know
9. Refused

[ASK S9 IF S8=1]

S9 On a scale of 0 to 10, where 0 is "very dissatisfied" and 10 is "very satisfied," how would you rate your satisfaction with the ComEd call center's ability to answer your questions? [SCALE 0-10; 98=Don't know, 99=Refused]

[ASK S10 IF S9<4]

S10 Why did you rate it that way?

1. (Provided inconsistent information)
2. (Didn't understand the question)
3. (Hard to reach the right person/person with the answer)
00. (Other, specify)
98. (Don't know)
99. (Refused)

[ASK OF ALL RESPONDENTS]

- S11 On a scale of 0 to 10, where 0 is very dissatisfied and 10 is very satisfied, how would you rate your satisfaction with... [SCALE 0-10; 96=not applicable, 98=Don't know, 99=Refused]
- a. The assessment report
 - b. The communication you had with the ComEd Sustainable Schools Program staff
 - c. The measures offered by the program (If needed: this is the equipment that is eligible for an incentive under the program)
 - d. The ComEd Sustainable Schools Program overall
 - e. ComEd overall

[ASK S12a IF S11a<4]

- S12a You indicated some dissatisfaction with the assessment report, why did you rate it this way?
[Record/answer UP TO 3]
1. Report was difficult to understand
 2. Wanted different equipment installed
 3. Report not delivered in a timely manner following the assessment
 00. Other, specify
 98. Don't know
 99. Refused

[ASK S12b IF S11b<4]

- S12b You indicated some dissatisfaction with the communication you had with the ComEd Sustainable Schools Program staff, why did you rate it this way?
1. Provided inconsistent information
 2. Staff member didn't understand my question
 3. Hard to reach the right person/person with the answer
 00. Other, specify
 98. Don't know
 99. Refused

[ASK S12c IF S11c<4]

- S12c You indicated some dissatisfaction with the measures offered by the ComEd Sustainable Schools Program, why did you rate it this way? [OPEN END; 98=Don't know, 99=Refused]

[ASK S12d IF S11d<4]

- S12d You indicated some dissatisfaction with the ComEd Sustainable Schools Program overall, why did you rate it this way?
[OPEN END; 98=Don't know, 99=Refused]

[ASK S12e IF S11e<4 or S11G<4]

- S12e You indicated some dissatisfaction with your electric company, ComEd] overall, why did you rate it this way?

1. (Rates are too high)
2. (Took too long to get measures installed)
3. (Poor customer service)
4. (Poor power supply/service)
00. (Other, specify)
98. (Don't know)
99. (Refused)

Marketing and Outreach

MK0 I'm now going to ask you about several specific ways in which you might have seen or heard information about the ComEd Sustainable Schools Program. Have you ever... [1=Yes, 2=No, 8=(Don't know), 9=(Refused)]

- a. Received information about the program in your monthly utility bill?
- b. Attended a ComEd customer event where the program was discussed?
- c. Discussed the program with a ComEd Account Manager?
- d. Discussed the program with a Contactor or Trade Ally?
- e. Received information about the program in an Email?
- f. Heard about the program from a colleague, friend or family member?
- g. Attended a meeting, seminar or workshop where the program was presented?
- h. Attended a webinar where the program was discussed?
- i. Read about the program in a ComEd Newsletter?
- j. Been directly contacted by a Willdan Energy Solutions outreach staff?

MK1b How useful were the program's marketing materials in providing information about the program? Would you say they were...

1. Very useful
2. Somewhat useful
3. Not very useful
4. Not at all useful
8. Don't know
9. Refused

[ASK MK1c IF MK1b=3,4]

MK1c What would have made the materials more useful to you? [Record/answer UP TO 3]

1. (More detailed information)
2. (Where to get additional information)
00. (Other, specify)
98. (Don't know)
99. (Refused)

- MK2 In general, what is the best ways of reaching schools like yours to provide information about energy efficiency opportunities like the ComEd Sustainable Schools Program? [*Record/answer UP TO 3*]
1. Bill inserts
 2. Flyers/ads/mailings
 3. E-mail
 4. Telephone
 5. ComEd Account Manager
 6. Willdan Energy Solutions advisor
 8. Trade allies/contractors
 00. Other, specify
 98. Don't know
 99. Refused

Benefits and Barriers

- B1a What do you see as the main benefits to participating in the ComEd Sustainable Schools Program? [*Record/answer UP TO 3*]
1. (Energy Savings/Saving money)
 2. (Good for the Environment)
 3. (Lower Maintenance Costs)
 4. (Better Quality/New Equipment)
 9. (Able to make improvements sooner)
 00. (Other, Specify)
 96. (No benefit)
 98. (Don't know)
 99. (Refused)

- B1b What do you see as the drawbacks to participating in the program? [*Record/answer UP TO 3*]
1. (Paperwork too burdensome)
 2. (Incentives not high enough/not worth the effort)
 3. (Program is too complicated)
 96. (No drawbacks)
 00. (Other, specify)
 98. (Don't know)
 99. (Refused)

Feedback and Recommendations

- R2 How would you improve the ComEd Sustainable Schools Program? [*Record/answer UP TO 4*]
1. (More measures) - specify
 2. (Greater publicity)
 3. (Better Communication/Improve Program Information)
 4. (Simplify application process)

- 5. (Quicker processing times)
- 6. (Opportunity to install additional equipment) [RECORD VERBATIM]
- 00. (Other, specify) [RECORD VERBATIM]
- 96. (No recommendations)
- 98. (Don't know)
- 99. (Refused)

Schoolographics

I only have a few general questions left.

F1 What is your type of school?

- 1. (K-12 School)
- 2. (College/University)
- 3. (Preschool)
- 00. (Other, specify) [RECORD VERBATIM]
- 98. (Don't know)
- 99. (Refused)

F2 Which of the following best describes the ownership of this facility?

- 1. Our school owns and occupies this facility
- 2. Our school owns this facility but it is rented to someone else
- 3. Our school rents this facility
- 8. Don't know
- 9. Refused

F6 And which of the following best describes the facility? This facility is...

- 1. Our school's only location
- 2. One of several locations owned by our school
- 3. The headquarters location of our school with several locations
- 8. Don't know
- 9. Refused

F7a And which of the following best describes the ownership of the lighting system in this building?

- 1. My School owns the lighting system
- 2. The owner of the building owns the lighting system
- 00. Other _Specify
- 8. Don't know
- 9. Refused

F4a How old is this School? [NUMERIC OPEN END, 0 TO 150; 998=Don't know, 999=Refused]

F5a How many students are at this facility? [NUMERIC OPEN END, 0 TO 2000; 9998=Don't know, 9999=Refused]

F5b How many faculty and staff are at this facility? [NUMERIC OPEN END, 0 TO 2000; 9998=Don't know, 9999=Refused]

Do you have anything else you would like to add?

OPEN ENDED

On behalf of ComEd, thank you for your time today. If in reviewing my notes, I discover a point I need to clarify, is it all right if I follow-up with you by phone or email? [IF YES, VERIFY PHONE NUMBER OR EMAIL]

7.3 Detailed Process Findings

7.3.1 Data Tracking

Table 7-4. Data Fields in Tracking System Spreadsheet

Data Fields on Tracking System Spreadsheet Tab titled "Totals"	Data Fields on Tracking System Spreadsheet Tab titled "Measures"
School Name	School Name
Address	Account Number
City	Invoice Number
Zip	Existing Fixture
ComEd Account Number	Retrofit Fixture
Decision Maker	kWh per Measure
Title	Cost per Measure
Telephone	Installed Quantity
Email	Extended kWh
Assessment Date	Extended Cost
Installation Date	
Contractor	
Verified kWh Savings	
Invoiced Amount	
ComEd Invoice Number	

Table 7-5. List of Program Measures

Measure Name	Unit	Co-Pay
(1) 48in Reduced 28 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (1) 48in T8 Linear Fluorescent	Fixture	0
(2) 48in Reduced 28 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (2) 48in T8 Linear Fluorescent	Fixture	0
(3) 48in Reduced 28 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (3) 48in T8 Linear Fluorescent	Fixture	0
(4) 48in Reduced 28 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (4) 48in T8 Linear Fluorescent	Fixture	0
(2) 48in Reduced 28 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (3) 48in T8 Linear Fluorescent	Fixture	0
(1) 48in Reduced 25 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (1) 48in T8 Linear Fluorescent	Fixture	0
(2) 48in Reduced 25 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (2) 48in T8 Linear Fluorescent	Fixture	0
(3) 48in Reduced 25 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (3) 48in T8 Linear Fluorescent	Fixture	0
(4) 48in Reduced 25 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (4) 48in T8 Linear Fluorescent	Fixture	0
(2) 48in Reduced 25 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (3) 48in T8 Linear Fluorescent	Fixture	0

Measure Name	Unit	Co-Pay
(2) 48in Reduced 25 Watt (1) Instant Start Ballast - Normal Light Output T8 Linear Fluorescent replacing (4) 48in T8 Linear Fluorescent 28 W HP T8 Replacing 34 W T12	Fixture	0
(2) 48in Reduced 28 Watt (1) Instant Start Ballast T8 Linear Fluorescent replacing (2) 48in T12 Linear Fluorescent	Fixture	0
(2) 48in Reduced 28 Watt (1) Instant Start Ballast T8 Linear Fluorescent replacing (3) 48in T12 Linear Fluorescent	Fixture	0
(2) 48in Reduced 28 Watt (1) Instant Start Ballast T8 Linear Fluorescent replacing (4) 48in T12 Linear Fluorescent	Fixture	0
(4) 46in (2) Programmed Start Ballast - Normal Light Output - HO T5 Linear Fluorescent replacing 400 Watt Mercury Vapor	Fixture	0
(6) 46in (3) Programmed Start Ballast - Normal Light Output - HO T5 Linear Fluorescent replacing 400 Watt Pulse Start HID	Fixture	0
17 Watt Integral Spiral (Non Res) CFL replacing 60 W (avg.) Incandescent	Lamp	0
23 Watt Integral Spiral (Non Res) CFL replacing 80 W (avg.) Incandescent	Lamp	0
LED replacing Incandescent	Lamp	0
Exit Sign Electro-Luminescent replacing Incandescent Exit Sign	Fixture	0
Wall Mounted Lighting Sensor <500 Watts Controls	Sensor	0
Ceiling Mounted Lighting Sensor ≥500 Watts Controls	Sensor	0
Cold Vending Machine Controls	Machine	0
EC Motors for Walk-In Coolers	Unit	0
EC Motors for Walk-In Freezers	Unit	0
Classroom DX Furnace Occupancy Sensor Control	1000 sq ft building	35%
Classroom Heat Pump Occupancy Sensor Control	1000 sq ft building	35%
HVAC Tune Up	Unit	35%