

Evaluation of Illinois Energy Now Green Nozzle Program and Savings Through Efficient Products Program

June 2013 through May 2014

Prepared for:
Illinois Department of Commerce and Economic Opportunity

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Final Report: May 2015

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Executive Summary

This report presents the results of measurement and verification efforts (M&V) for the Illinois Department of Commerce and Economic Opportunity (DCEO) Green Nozzle and Savings Through Efficient Products (STEP) programs implemented in Illinois during electric program year six (EPY6) and natural gas program year three (GPY3), from June 2013 to May 2014.

The STEP Program is a self-install program that provides free energy-saving measures to all Illinois public facilities (including schools), such as LED exit signs and lamps, CFLs, low-flow showerheads, faucet aerators, low-flow pre-rinse spray valves, occupancy sensors, and vending machine controls. The program differs from a traditional direct install program in that the equipment is self-installed by the participants.

The Green Nozzle Program provides low-flow pre-rinse spray valves (“Green Nozzles”) to large institutions with cafeterias at no cost to the participant. The low-flow pre-rinse spray valves result in energy savings through reduced hot water consumption. Both programs are geared toward increasing awareness and use of energy efficient products in the public sector.

During EPY6/GPY3 the STEP program distributed a total of 9,427 measures. The Green Nozzle program distributed 790 low-flow pre-rinse spray valves during the program year. Table ES-1 shows the breakdown of measures distributed and the number of participants in each program during EPY6/GPY3.

Table ES-1 Breakdown of Measures Distributed

<i>Program</i>	<i>Total Number of Measures Distributed</i>	<i>Total Number of Participants</i>
Green Nozzle	790	285
STEP	9,427 ¹	289 ²

Data for the study were collected through review of program materials, and interviews with DCEO staff members, program implementation contractor staff members, program participants, and contractors.

The main features of the approach used for the evaluation are as follows:

- An analytical review of program measures was performed to verify gross savings estimates. The algorithms and stipulated values outlined in the Illinois Statewide TRM Version 2.0 were used to estimate the gross savings for the Green Nozzle and STEP programs.

¹ This number includes measures that were returned throughout the program year.

² 289 participants had walk-throughs but only 230 received measures. Two large suburban districts participated in walk-throughs but due to timing were not able to have the measure sent and installed in time.

- Interviews were conducted with program implementation staff from Midwest Energy Efficiency Association (MEEA) and University of Illinois at Chicago Energy Resources Center (ERC) to obtain information for the evaluation.
- Installation rates for the Green Nozzle Program were developed through a survey of participants, and follow-up calls and emails were conducted with participants who were non-responsive to the survey. In total, 202 EPY6/GPY3 participants provided information on installation rates.
- Verifications of installation for the STEP program were completed through site-visits and review of program documentation substantiating that the measures were installed.
- The estimation of free ridership and net program savings was based on participant decision maker survey responses. In total, 22 decision makers completed the survey for the Green Nozzle Program and 20 decision makers completed the survey for the STEP Program.

The gross and net ex post therm savings for the Green Nozzle Program during EPY6/GPY3 are summarized in Table ES-2. During this period, gross and net ex post energy savings total 407,099 therms. The net-to-gross ratio is 100%. The gross and net ex post kWh savings are displayed in Table ES-3. Gross and net ex post electric savings total 90,013 kWh. The net-to-gross ratio is 100%. The annual gallons of water saved total 50,175,478 (not shown in table).

Table ES-2 Summary of Therm Savings for the Green Nozzle Program

<i>Utility</i>	<i>Ex Ante Therm Savings</i>	<i>Gross Ex Post Therm Savings</i>	<i>Gross Realization Rate</i>	<i>Net Ex Post Therm Savings</i>	<i>Net-to-Gross Ratio</i>
Ameren	80,527	75,167	93%	75,167	100%
Nicor	98,262	89,418	91%	89,418	100%
North Shore	4,466	4,064	91%	4,064	100%
Peoples	262,032	238,449	91%	238,449	100%
Total	445,287	407,099	91%	407,099	100%

Table ES-3 Summary of kWh Savings for the Green Nozzle Program

<i>Utility</i>	<i>Ex Ante kWh Savings</i>	<i>Gross Ex Post kWh Savings</i>	<i>Gross Realization Rate</i>	<i>Net Ex Post kWh Savings</i>	<i>Net-to-Gross Ratio</i>
Ameren	98,915	90,013	91%	90,013	100%
ComEd	-	-	-	-	-
Total	98,915	90,013	91%	90,013	100%

The variance between ex ante and gross ex post energy savings estimates is attributable to an overestimation of installation rates for the pre-rinse spray valves distributed through the Green Nozzle Program.

Gross and net ex post therm savings for EPY6/GYP3 are summarized in Table ES-4. During the EPY6/GPY3 period, gross and ex post natural gas savings total 115,215 therms and net ex post natural gas savings total 114,998. The net-to-gross ratio rounds to 100% (rounded from 99.8%).

Table ES-4 Summary of Therm Savings for the STEP Program

<i>Utility</i>	<i>Ex Ante Therm Savings</i>	<i>Gross Ex Post Therm Savings</i>	<i>Gross Realization Rate</i>	<i>Net Ex Post Therm Savings</i>	<i>Net-to-Gross Ratio</i>
Ameren	13,296	12,332	93%	12,312	100%
Nicor	86,705	78,008	90%	77,859	100%
North Shore	15,434	13,925	90%	13,899	100%
Peoples	12,287	10,950	89%	10,928	100%
Total	127,722	115,215	90%	114,998	100%

The gross and net ex post electric savings for the STEP program during EPY6/GPY3 are summarized in Table ES-5. During the EPY6/GPY3 period, gross ex post electric savings total 2,660,909 kWh. Net ex post electric savings total 2,595,864 kWh. The net-to-gross ratio is 98%.

The difference between ex ante and gross ex post kWh savings is attributable to the underestimation of the change in wattage of LED screw-in bulbs in ex ante calculations and the installation rate.

Table ES-5. Summary of kWh Savings for the STEP Program

<i>Utility</i>	<i>Ex Ante kWh Savings</i>	<i>Gross Ex Post kWh Savings</i>	<i>Gross Realization Rate</i>	<i>Net Ex Post kWh Savings</i>	<i>Net-to-Gross Ratio</i>
Ameren	193,168	176,952	92%	172,399	97%
ComEd	2,765,205	2,483,957	90%	2,423,464	98%
Total	2,958,373	2,660,909	90%	2,595,864	98%

The gross ex post peak kW savings for the STEP Program during EPY6/GPY3 are summarized in Table ES-6. During this period, gross ex post peak demand reductions total 71.01 kW. Net ex post peak demand reductions total 65.77 kW. The net-to-gross ratio is 93%.

Table ES-6. Summary of Peak kW Savings for the STEP Program

<i>Utility</i>	<i>Ex Ante kW Savings</i>	<i>Gross Ex Post kW Savings</i>	<i>Gross Realization Rate</i>	<i>Net Ex Post kW Savings</i>	<i>Net-to-Gross Ratio</i>
Ameren	7.55	7.10	94%	6.58	93%
ComEd	67.99	63.91	94%	59.19	93%
Total	75.54	71.01	94%	65.77	93%

The following presents a selection of key findings from the EPY6/GPY3 program year:

- **Green Nozzle and STEP Program Participants Satisfied with Program and Measures:** Participants in both programs were generally satisfied with the program, and equipment they received. The majority of the STEP program survey respondents indicated that they were either satisfied or very satisfied with their overall program experience. Only three of the Green Nozzle Program survey respondents indicated that they were dissatisfied with the program, while 64% of respondents stated that they were satisfied or very satisfied.
- **Mixed Levels of Satisfaction with Pre-Rinse Spray Valves:** Approximately 35% of participant survey respondents indicated that their expectations were not met or mostly met. Additionally, half of the survey respondents indicated that they did not have the pre-rinse spray valves installed. This low install rate contrasted with findings from a broader verification effort of 180 participants conducted by email and telephone. Analysis of the combined responses found that 91% of the distributed spray valves were installed.
- **CFLS, Occupancy Sensors, and Aerators Most Popular Measures:** The measures of most interest among STEP program participants overall were CFL bulbs, occupancy sensors, and aerators. The measures with the lowest level of interest were vending machine controls. One possible reason for the low interest in vending machine controls is that not all facilities have vending machines, and those that do have only a few machines. When considering popularity of measures by organization type, occupancy sensors and exit signs were most popular with schools. For high schools and park districts (with recreation centers), showerheads were a popular measure.
- **Potential for Improvement to Green Nozzle and STEP Program Data:** There were some limitations to the program tracking data provided by the Green Nozzle and STEP Programs. There were two main issues; missing data and additional data that would have been beneficial to collect. These issues were resolved through consultations with implementation staff.
- **Measure Tracking System Implemented:** For the upcoming program year, the MEEA team plans to work with FedEx to track products being distributed to participants of the STEP program. They will be able to track when people have received the products and who signed for the products. The product packaging will include the Illinois Energy Now brand and instructions for how to return the products will be included.

The following recommendations are offered in the interest of continuing to develop the programs' strategic advantages during coming program years:

- **Green Nozzle Program Should Collect Additional Data:** Green Nozzle program staff should collect additional information from participants applying for the program including participant email addresses and utility service provider. Participant contact information is necessary for data collection and program correspondence, and utility information is needed to meet reporting requirements. This issue will likely be resolved as the measure is integrated into the STEP program.
- **Consider Collecting Additional Information during STEP Program Walk-Throughs:** A few program participants reported that they received equipment that they were unable to install due to conditions that prevented the installation (e.g., low flow devices not fitting plumbing

fixtures). It may be possible for program staff to improve the walk-through process by collecting additional information related to the installation of the efficiency measures. This information would include plumbing fixture size for low-flow equipment and wiring requirements for occupancy sensors.

1. Introduction

This report presents the results of the impact and process evaluations of Illinois’s Green Nozzle and STEP Programs offered by the Illinois Department of Commerce and Economic Opportunity (DCEO). This report presents results for activity from both programs during electric program year six (EPY6) and natural gas program year three (GPY3), from June 2013 to May 2014.

1.1 Description of Programs

1.1.1 Green Nozzle Program

The Green Nozzle Program is funded by DCEO and is administered by the Energy Resources Center located at the University of Illinois at Chicago. The program provides low-flow pre-rinse spray valves (“Green Nozzles”) to large institutions with cafeterias at no cost to the participants. At a typical cafeteria, the dishwashing operation consumes over two-thirds of all water used by the establishment. Moreover, nearly one-half of the water used in dishwashing is consumed through the use of spray valves. The installation of low-flow pre-rinse spray valves helps participating institutions save water and energy while maintaining equivalent cleaning performance to recent baseline models. The water and energy savings potential of low-flow pre-rinse spray valves makes them an attractive efficiency measure to both efficiency programs and consumers.

During EPY6/GPY3, 790 low-flow pre-rinse spray valves were distributed to 285 program participants.

1.1.2 Savings Through Efficient Products (STEP) Program

The Savings Through Efficient Products Program offers qualified public facilities energy-saving equipment at no cost. The program was originally offered as a self-install component of the Lights for Learning® program, but has since been renamed and established as a separate program. Some products offered through the STEP Program include: LED exit signs, low-flow faucet aerators, low-flow showerheads, low-flow pre-rinse spray-valves, CFLs, vending machine controls, occupancy sensors, and exterior LED bulbs.

The participation process is as follows:

- STEP begins with a free onsite facility energy assessment to identify opportunities for upgrades.
- Midwest Energy Efficiency Alliance (MEEA) orders applicable products and after installation provides a comprehensive report outlining the free upgrades and relevant information about additional statewide energy savings programs.
- Facility maintenance staff members install the energy-saving products within four months of delivery or by May 31, (whichever date comes first), resulting in energy and cost savings for the facility.

The STEP Program is funded by DCEO and administered by the Midwest Energy Efficiency Alliance (MEEA), with assistance from Energy Resources Center engineers, Green Home Experts, the product supplier, and promotional assistance from Applied Proactive Technologies, Inc.

The program distributed 9,427 measures in EPY6/GPY3; a breakdown of the measures is shown in Table 1-1 below.

Table 1-1 Total Measures Distributed By Type

<i>Measure</i>	<i>Number Distributed</i>
CFL	1,437
LED Exit Sign	415
LED Exit Sign Retrofit Kit	998
Aerator	1,820
Green Nozzle	56
VMC-Refrigerator	232
VMC- Snack	60
Occupancy Sensor	3,051
Screw-in LED	609
Showerhead	750
Total Measures	9,427

1.2 Overview of Evaluation Approach

The overall objective for the impact evaluation of the Green Nozzle and STEP Programs was to determine the EPY6/GPY3 gross and net electric energy savings, peak demand reductions, and natural gas savings resulting from the measures distributed by the programs.

The approach for the impact evaluation was based on the following features:

- An analytical review of program measures was performed to verify gross savings estimates. The algorithms and stipulated values outlined in the Illinois Statewide TRM were used to estimate the gross savings for the Green Nozzle and STEP Programs.
- Relevant Midwest Energy Efficiency Association (MEEA) and University of Illinois at Chicago Energy Resources Center (ERC) program implementation staff members were interviewed to obtain information for the evaluation.
- Installation rates for the Green Nozzle Program were developed through a survey of participants and additional follow-up calls and email conversations with non-respondents. In total, 202 EPY6/GPY3 participants provided information on installation rates.
- Verifications of installation for the STEP program were completed through site-visits and review of program documentation substantiating that the measures were installed.
- The estimation of free ridership and net program savings was based on participant decision maker survey responses. In total, 22 decision makers completed the survey for the Green Nozzle Program and 20 decision makers completed the survey for the STEP Program.

1.3 Organization of Report

This report on the impact and process evaluation of the Green Nozzle and STEP Programs for EPY6/GPY3 is organized as follows:

- Chapter 2 presents and discusses the analytical methods and results of estimating gross savings for measures installed under each program.
- Chapter 3 presents and discusses the analytical methods and results of estimating net savings of each program.
- Chapter 4 presents and discusses the analytical methods and results of the process evaluation of each program.
- Appendix A provides a copy of the questionnaire used for the survey of participants in the Green Nozzle Program.
- Appendix B provides the results of the surveys used for Green Nozzle Program participants.
- Appendix C provides a copy of the questionnaire used for the survey of participants in the STEP Program.
- Appendix D provides the results of the surveys used for STEP Program participants.

2. Estimation of Gross Savings

This chapter discusses the estimation of gross electric and natural gas energy savings resulting from measures installed through the Green Nozzle and STEP Programs during EPY6/GPY3, the period from June 2013 through May 2014. Section 2.1 describes the methodology used for estimating gross savings. Section 2.2 presents the results from the calculation of savings for measures distributed through the programs.

2.1 Methodology for Estimating Gross Savings

2.1.1 Green Nozzle Program

The M&V approach for the Green Nozzle Program is aimed at the following:

- Verifying the number of low-flow pre-rinse spray valves distributed as a result of the program;
- Determining the percentage of distributed low-flow pre-rinse spray valves that are installed; and
- Estimating the extent to which installed low-flow pre-rinse spray valves are used.

Table 2-1 below summarizes the inputs used for gross savings calculations and the source of each input.

Table 2-1 Sources for Gross Impact Parameters

<i>Parameter</i>	<i>Source</i>
Quantities & Specifications	Program tracking data
Location of Installation	Telephone follow-up surveys with program participants
Hours of Use Per Day	Illinois Statewide Technical Reference Manual
Installation Rate	Telephone follow-up surveys with program participants
Baseline Flow Rate	Illinois Statewide Technical Reference Manual
Water Heater Outlet Water Temperature	70 degrees
Inlet Water Temperature	54.1 degrees

2.1.1.1. Review of Documentation

The program implementation team at the Energy Resources Center (ERC) of the University of Illinois at Chicago provided in-depth documentation pertaining to the low-flow pre-rinse spray valves distributed through the program. The first step in the evaluation effort was to review this documentation and other relevant program materials.

For each energy efficient low-flow pre-rinse spray valve distributed, the available documentation was reviewed, with particular attention given to the calculation procedures and documentation for savings estimates.

Each report of program activity was reviewed to determine whether the following types of information had been provided:

- Documentation for the measures distributed at trade shows;
- Documentation for the measures distributed to program participants; and
- Information about the savings calculation methodology, including (1) what methodology was used, (2) specifics on the assumptions used and the sources of those assumptions, and (3) the accuracy of calculations.

2.1.1.2. Analytical Desk Review

ADM reviewed the energy savings algorithm used by program staff to estimate gross therm and kWh savings for the measures distributed through the program. This review was performed to verify that the assumptions were reasonable and that the algorithms used were correct. The assessment of reasonableness of the calculations was based on the procedures outlined in the Illinois Statewide TRM. Ex ante savings calculations were checked to verify that calculation errors were not made and that the reported results could be replicated.

2.1.1.3. Data Collection

A telephone survey was administered to a sample of program participants. The telephone survey provided data including:

- The types of low-flow pre-rinse spray valves that were distributed;
- How many low-flow pre-rinse spray valves are still installed;
- Participants' decision-making considerations for participating in the program;
- Changes in participant behavior after participating in the program; and
- General participant feedback on the program.

2.1.1.4. Procedures for Estimating Savings from Measures Installed through the Green Nozzle Program

Gross savings estimates based on the procedures outlined in the Illinois TRM for the Green Nozzle Program require the following parameters:

- Baseline flow rate;
- Flow rate of low-flow pre-rinse spray valves;
- Percentage of low-flow pre-rinse spray valves still in use;

- Percentage of participants with natural gas heating;
- Water heater outlet water temperature;
- Water heater inlet water temperature; and
- Hours of use.

For this evaluation, the installation rate parameter was determined through the telephone survey with program participants. The percentage of participants with natural gas heating parameters was provided by ERC. The remaining parameters were determined through use of the Illinois Statewide Technical Reference Manual. ADM and ERC agreed to treat all participants as “large institutional establishments.”

Equations used to determine savings for all low-flow pre-rinse spray valves distributed through the program are listed below. Table 2-2 describes each parameter used in the equations.

The equation used to calculate gallons saved is: $[(FLO_{base} - FLO_{eff}) \text{ gal/min} \times 60 \text{ min/hr} \times \text{HOURS}_{day} \times \text{DAYS}_{year}]$

The equation used to calculate gross annual Therm savings is: $\Delta \text{Therm savings} = [\text{GALLONS} \times 8.33 \times 1 \times (T_{out} - T_{in}) \times (1/\text{EFF}) / 100,000 \text{ Btu}]$

The equation to calculate gross annual kWh savings is: $\Delta \text{kWh: } [\text{GALLONS} \times 8.33 \times 1 \times (T_{out} - T_{in}) \times (1/\text{EFF electric}) / 3,413 \times \text{FLAG}]$

Table 2-2 Gross Impact Parameters

<i>Parameter</i>	<i>Description</i>
FLO _{base}	Base case flow in gallons per minute
FLO _{eff}	Efficient case flow in gallons per minute
HOURS _{day}	Hours that Green Nozzle is in use per day
DAYS _{year}	Days that Green Nozzle is used per year
T _{out}	Water Heater Outlet Water Temperature
T _{in}	Inlet Water Temperature
EFF	Efficiency of gas water heater supplying hot water to pre-rinse spray valve
FLAG	1 if electric or 0 if gas
ISR	In service rate of Green Nozzle dependent on install method

The Green Nozzle Program distributed 0.65 gpm and 0.95 gpm spray valves during the EPY6/GPY3 program year to participants with natural gas or electric water heating. Table 2-3 shows TRM values used for each calculation parameter.

Table 2-3 Gross Impact Parameters with Values Used

<i>Parameter</i>	<i>Description</i>	<i>Value Used</i>
FLObase	Base case flow in gallons per minute	1.9
FLOeff	Efficient case flow in gallons per minute	0.65 or 0.95
HOURSday	Hours that Green Nozzle is in use per day	3
DAYSyear	Days that Green Nozzle is used per year	312
Tout	Water Heater Outlet Water Temperature	70
Tin	Inlet Water Temperature	54.1
EFF	Efficiency of gas water heater supplying hot water to pre-rinse spray valve	75% for therm savings and 97% for kWh
FLAG	1 if electric or 0 if gas	1 or 0

2.1.2 Savings Through Efficient Products (STEP) Program

The M&V approach for the STEP Program is aimed at the following:

- Verifying the total number of program participants;
- Verifying the number of program participants with eligible savings for the EPY6/GPY3 program year;
- Verifying the number of measures distributed as a result of the program;
- Determining the percentage of measures that are currently installed; and
- Estimating the extent to which installed measures are used.

Table 2-4 below summarizes the inputs needed for gross savings calculations and the source of each input.

Table 2-4 Sources for Gross Impact Parameters

<i>Parameter</i>	<i>Source</i>
Project Details	Program Tracking Data
Energy Efficient Equipment Specifications	Manufacturers' Literature
Lighting Hours of Operation	Illinois Statewide Technical Reference Manual, Telephone follow-up surveys, On-site visits
Location of Installation of Measures	Telephone follow-up surveys with program participants, On-site visits
Installation Rate	Telephone follow-up surveys with program participants, On-site visits

2.1.2.1. Review of Documentation

DCEO's program implementation contractor, Midwest Energy Efficiency Alliance, provided in-depth documentation pertaining to all measures distributed through the program. The first step in the evaluation effort was to review this documentation and other program materials relevant to the evaluation effort. For each energy efficient measure distributed, the available documentation was

reviewed, with particular attention given to the calculation procedures and documentation for savings estimates.

The savings calculations for each public facility were reviewed to determine whether the following types of information had been provided:

- The methodology used to estimate savings;
- The assumptions used in the calculations and their sources; and
- The correctness of calculations.

2.1.2.2. Analytic Desk Review

ADM reviewed the energy savings algorithms used by program staff to estimate gross kWh and therm savings for the measures distributed through the program. This review was performed to verify that the assumptions were reasonable and that the algorithms used were correct. The assessment of reasonableness of the calculations was based on the procedures outlined in the Illinois Statewide TRM. Ex ante savings calculations were checked to verify that calculation errors were not made and that the reported results could be replicated.

2.1.2.3. Data Collection

Telephone surveying was conducted with a sample of program participants. The telephone survey provided useful data, including:

- The types of measures that were distributed;
- How many of the distributed measures were still installed;
- The extent measures were used;
- Participants' decision-making considerations for participating in program;
- Changes in participant behavior after participating in the program; and
- General participant feedback on the program.

ADM completed on-site visits at a select number of participating public facilities for measure verification purposes. During site visits, field technicians verified that the measures were installed, were installed correctly, and were functioning.

2.1.2.4. Procedures for Estimating Savings from Measures Installed through the STEP Program

ADM applied the algorithms and stipulated values outlined in the Illinois Statewide TRM to estimate the gross savings for STEP Program during EPY6/GPY3. Parameters used to calculate savings for each measure are explained in detail below. ADM utilized input values specific to each public facility in the calculation methodologies below. The following calculation methodologies

first list the input parameters and how they were determined, followed by a description of the formulas used.

Aerator

Savings calculations for aerators were based on the following parameters:

- Baseline flow rate;
- Flow rate of energy efficient aerators;
- Percentage of aerators still in use;
- Percentage of participants with natural gas heating;
- Number of occupants per faucet;
- Energy per gallon of hot water supplied by gas.

The installation rate parameter was determined through on-site visits with program participants. The percentage of participants with natural gas water heating was provided by MEEA. The remaining parameters were determined through use of the Illinois Statewide Technical Reference Manual. ADM and MEEA agreed to treat all participants as either an elementary, middle/high school, or “other”.

The equation used to determine savings for all aerators distributed through the program is listed below. Table 2-5 describes each parameter used in the equation.

Equation used to calculate gross annual Therm savings: $\Delta\text{Therm savings} = \% \text{FossilDHW} \times ((\text{GPM}_{\text{base}} \times \text{L}_{\text{base}} - \text{GPM}_{\text{low}} \times \text{L}_{\text{low}}) \times \text{NOPF} \times 365.25 \times \text{DF}) / \text{GPMfactor} \times \text{EPG}_{\text{gas}} \times \text{ISR}$

Table 2-5 Gross Impact Parameters-Aerator

<i>Parameter</i>	<i>Description</i>
%Fossil DHW	Proportion of water heating supplied by fossil fuel heating
GPM_base	Average flow rate, in gallons per minute “as used”
GPM_low	Average flow rate in GPM of low-flow aerator “as used”
L_base	Average baseline length faucet use per capita
L_low	Average retrofit length faucet per capita for all faucets in minutes
NOPF	Number of occupants per faucet
DF	Drain factor as defined
EPG gas	Energy per gallon of hot water supplied by gas
ISR	In service rate of faucet aerator dependent on install method

The values for the equation parameters are shown in Table 2-6.

Table 2-6 Gross Impact Parameters with Values Used-Aerator

Parameter	Value Used		
	Elementary	Middle/High School	Other
%Fossil DHW	100%	100%	100%
GPM_base	1.2	1.2	1.2
GPM_low	0.5	0.5	0.5
Usage	3,750	11,250	5,000
EPG gas	0.00446	0.00446	0.00446

CFL

Savings calculations for CFLs and CFLs with sensors were based on the following parameters:

- Baseline wattage;
- Wattage of energy efficient CFL;
- Percentage of CFLs still in use; and
- Hours of use.

These parameters were determined through telephone surveys and on-site visits with program participants. The remaining parameters were determined through use of the Illinois Statewide Technical Reference Manual. ADM and MEEA agreed to treat all participants as either an elementary, middle/high school, or “other”.

The equation used to determine savings for all CFLs distributed through the program is listed below. Table 2-7 describes each parameter used in the equation.

Equation used to calculate gross annual kWh savings: $\Delta kWh = ((WattsBase - WattsEE) / 1000) \times ISR \times HOURSday \times WHFe$

Table 2-7 Gross Impact Parameters-CFL

Parameter	Description
WattsBase	Wattage of original bulb
WattsEnergyEfficient	Wattage of CFL installed
HOURSday	Hours that CFL is in use per day
WHFe	Waste heat factor for energy to account for cooling energy savings from efficient lighting
ISR	In service rate of CFLs dependent on install method

The values used for the equation parameters are shown in Table 2-8.

Table 2-8 Gross Impact Parameters with Values Used-CFL

Parameter	Value Used		
	Elementary	Middle/High School	Other
WattsBase	60	60	60
WattsEnergyEfficient	23	23	23
HOURSday	2,118	2,327	2,118
WFHe	1.21	1.23	1.33

Green Nozzle

Savings calculations for low-flow pre-rinse spray valves were based on the following parameters:

- Baseline flow rate;
- Flow rate of low-flow pre-rinse spray valves;
- Percentage of low-flow pre-rinse spray valves still in use;
- Percentage of participants with natural gas heating;
- Water heater outlet water temperature;
- Water heater inlet water temperature; and
- Hours of use.

The installation rate parameter was determined through telephone surveys and on-site visits with program participants. The percentage of participants with natural gas heating parameters was provided by MEEA. The remaining parameters were determined through use of the Illinois Statewide Technical Reference Manual. ADM and MEEA agreed to treat all participants as either an elementary school, middle/high school, or “other”.

The equations used to determine savings for all low-flow pre-rinse spray valves distributed through the program is listed below. Table 2-9 describes each parameter used in the equations.

Equation used to calculate gallons saved: $[(FLO_{base} - FLO_{eff}) \text{ gal/min} \times 60 \text{ min/hr} \times \text{HOURSday} \times \text{DAYSy\text{ear}}]$

Equation used to calculate gross annual Therm savings: $\Delta \text{Therm savings} = [\text{GALLONS} \times 8.33 \times 1 \times (\text{Tout} - \text{Tin}) \times (1/\text{EFF}) / 100,000 \text{ Btu}] \times \text{ISR}$

Table 2-9 Gross Impact Parameters-Green Nozzle

<i>Parameter</i>	<i>Description</i>
FLObase	Base case flow in gallons per minute
FLOeff	Efficient case flow in gallons per minute
HOURSday	Hours that Green Nozzle is in use per day
DAYSyear	Days that Green Nozzle is used per year
Tout	Water Heater Outlet Water Temperature
Tin	Inlet Water Temperature
EFF	Efficiency of gas water heater supplying hot water to pre-rinse spray valve
ISR	In service rate of Green Nozzle dependent on install method

The values used for the equation parameters are shown in Table 2-10.

Table 2-10 Gross Impact Parameters with Values Used-Green Nozzle

<i>Parameter</i>	<i>Value Used</i>		
	<i>Elementary</i>	<i>Middle/High School</i>	<i>Other</i>
FLObase	1.90	1.90	1.90
FLOeff	1.06	1.06	1.06
HOURSday	3	3	3
DAYSyear	312	312	312
Tout	124.1	124.1	124.1
Tin	54.1	54.1	54.1
EFF	97%	97%	97%

LED Exit Sign

Savings calculations for LED exit signs were based on the following parameters:

- Baseline wattage of bulb;
- Wattage of energy efficient LED exit sign;
- Percentage of LED exit signs still in use;
- Annual operating hours; and
- Waste heat factor for energy.

The installation rate parameter was determined through telephone surveys and on-site visits with program participants. The remaining parameters were determined through use of the Illinois Statewide Technical Reference Manual. ADM and MEEA agreed to treat all participants as either an elementary, middle/high school, or “other”.

The equation used to determine savings for all LED exit signs distributed through the program is listed below. Table 2-11 describes each parameter used in the equation.

Equation used to calculate gross annual kWh savings: $\Delta kWh = ((WattsBase - WattsEE) / 1000) \times HOURS \times WHFe \times ISR$

Table 2-11 Gross Impact Parameters-LED Exit Sign

<i>Parameter</i>	<i>Description</i>
WattsBase	Actual wattage if known
WattsEE	Actual Wattage
HOURS	Annual operating hours
WHFe	Waste heat factor for energy
ISR	In service rate of LED Exit Signs dependent on install method

The values used for the equation parameters are shown in Table 2-12.

Table 2-12 Gross Impact Parameters with Values Used-LED Exit Sign

<i>Parameter</i>	<i>Value Used</i>					
	<i>Elementary-Fluorescent</i>	<i>Middle/High school Fluorescent</i>	<i>Other</i>	<i>Elementary-Incandescent</i>	<i>Middle/High school Incandescent</i>	<i>Other</i>
WattsBase	11	11	11	35	35	35
WattsEE	2.4	2.4	2.4	2.4	2.4	2.4
HOURS	8,766	8,766	8,766	8,766	8,766	8,766
WHFe	1.21	1.23	1.24	1.21	1.23	1.24

LED Screw-in Bulb

Savings calculations for LED screw-in bulbs were based on the following parameters:

- Baseline wattage;
- Wattage of LED screw-in bulb;
- Percentage of LED screw-in bulbs still in use; and
- Hours of use.

These parameters are determined through telephone surveys and on-site visits administered with participants of the program. The remaining parameters were determined through use of the Illinois Statewide Technical Reference Manual. ADM and MEEA agreed to treat all participants as either an elementary, middle/high school, or “other”.

The equation used to determine savings for all LED screw-in bulbs distributed through the program is listed below. Table 2-13 describes each parameter used in the equation.

Equation used to calculate gross annual kWh savings: $\Delta\text{kWh} = ((\text{Delta Watts}) / 1000) \times \text{HOURS} \times \text{WHFe} \times \text{ISR}$

Table 2-13 Gross Impact Parameters-LED Screw-in Bulb

<i>Parameter</i>	<i>Description</i>
Delta Watts	Baseline bulb – LED bulb
HOURS _{day}	Hours that LED is in use per day
WHFe	Waste heat factor for energy
ISR	In service rate of LED's dependent on install method

The values used for the equation parameters are shown in in Table 2-14.

Table 2-14 Gross Impact Parameters with Values Used-LED Screw-in Bulb

<i>Parameter</i>	<i>Value Used</i>		
	<i>Elementary</i>	<i>Middle/High School</i>	<i>Other</i>
Delta Watts	57	57	57
HOURS _{day}	4,903	4,903	4,903
WHFe	1	1	1

Occupancy Sensor/Wall Switch

Savings calculations for occupancy sensors/wall switches were based on the following parameters:

- Hours of use before occupancy sensor installed;
- Hours of use of occupancy sensor after installation; and
- Wattage of occupancy sensor.

These parameters were determined through telephone surveys and on-site visits with program participants. The remaining parameters were determined through use of the Illinois Statewide Technical Reference Manual. ADM and MEEA agreed to treat all participants as either an elementary, middle/high school, or “other”.

The equation used to determine savings for all occupancy sensors distributed through the program is shown below. Table 2-15 describes each parameter used in the equation.

Equation used to calculate gross annual kWh savings is $\Delta kWh = KW_{controlled} * Hours * ESF * WHFe \times ISR$

Table 2-15 Gross Impact Parameters-Occupancy Sensor

<i>Parameter</i>	<i>Description</i>
Kwcontrolled	Total lighting load connected to the control in kilowatts. Savings is per control
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
Hours	Total operating hours of the controlled lighting circuit before the controls are installed
ISR	In service rate of occupancy sensors dependent on install method

The values used for the equation parameters are shown in Table 2-16.

Table 2-16 Gross Impact Parameters with Values Used-Occupancy Sensor

<i>Parameter</i>	<i>Value Used</i>		
	<i>Elementary</i>	<i>Middle/High School</i>	<i>Other</i>
KWcontrolled	0.350	0.350	0.350
ESF	41%	41%	41%
WHFe	1.21	1.23	1.24
Hours	2,118	2,327	4,439

Vending Machine Control

Savings calculations for vending machine controls were based on the following parameters:

- Connected load of the controlled equipment;
- Hours of operation; and
- Energy savings factor that represents the percent reduction in kWh consumption of the controlled equipment.

The installation rate parameter was determined through telephone surveys and on-site visits with program participants. The remaining parameters were determined through use of the Illinois Statewide Technical Reference Manual. ADM and MEEA agreed to treat all participants as either an elementary, middle/high school, or “other”.

The equation used to determine savings for all vending machine controls distributed through the program is listed below. Table 2-17 describes each parameter used in the equation.

Equation used to calculate gross annual kWh savings: $\Delta\text{kWh} = \text{WATTS}_{\text{base}} / 1000 \times \text{HOURS} \times \text{ESF} \times \text{ISR}$

Table 2-17 Gross Impact Parameters-Vending Machine Control

<i>Parameter</i>	<i>Description</i>
WATTSbase	Connected watts of the controlled equipment
1000	Conversion factor
HOURS	Operating hours of the connected equipment
ESF	Energy Savings Factor, represents the percent reduction in annual kWh consumption of the equipment controlled
ISR	In service rate of vending machine control dependent on install method

The values used for the equation parameters are shown in Table 2-18.

Table 2-18 Gross Impact Parameters with Values Used-Vending Machine Control

<i>Parameter</i>	<i>Value Used</i>		
	<i>Glass Front Refrigerated</i>	<i>Plastic Front Refrigerated</i>	<i>Snack</i>
WATTSbase	460	400	85
1000	1000	1000	1000
HOURS	8,766	8,766	8,766
ESF	30%	46%	46%

Showerhead

Savings calculations for showerheads were based on the following parameters:

- Baseline flow rate;
- Flow rate of showerheads;
- Percentage of showerheads still in use;
- Percentage of participants with natural gas heating;
- Water heater outlet water temperature;
- Water heater inlet water temperature; and
- Hours of use.

The installation rate parameter was determined through telephone surveys and on-site visits with program participants. The percentage of participants with natural gas heating parameters was provided by MEEA. The remaining parameters were determined through use of the Illinois Statewide Technical Reference Manual Version 2.0. ADM and MEEA agreed to treat all participants as either an elementary, middle/high schools, or “other”.

The equations used to determine savings for all 750 showerheads distributed through the program is listed below. Table 2-19 describes each parameter used in the equations.

Equation used to calculate gallons saved: $[(\text{GPM}_{\text{base}} \times \text{L}_{\text{base}} - \text{GPM}_{\text{low}} \times \text{L}_{\text{low}}) \times \text{NSPD} \times 365.25 \times \text{ISR}]$

Equation used to calculate gross annual Therm savings: $\Delta\text{Therm savings} = \% \text{FossilDHW} \times ((\text{GPM}_{\text{base}} \times \text{L}_{\text{base}} - \text{GPM}_{\text{low}} \times \text{L}_{\text{low}}) \times \text{NSPD} \times 365.25) \times \text{EPG}_{\text{gas}} \times \text{ISR}$

Table 2-19 Gross Impact Parameters-Showerhead

<i>Parameter</i>	<i>Description</i>
GPM_base	Flow rate of the baseline showerhead
L_base	Shower length in minutes with baseline showerhead
GPM_low	As-used flow rate of the low-flow showerhead
L_low	Shower length in minutes with low-flow showerhead
NSPD	Estimated number of showers taken per day for one showerhead
EPG_gas	Energy per gallon of hot water supplied by gas
ISR	In service rate of Green Nozzle dependent on install method

The values used for the equation parameters are shown in Table 2-20.

Table 2-20 Gross Impact Parameters with Values Used-Showerhead

<i>Parameter</i>	<i>Value Used</i>	
	<i>Elementary</i>	<i>Middle/High School</i>
GPM_base	2.67	1.90
L_base	8.2	8.2
GPM_low	1.13	1.13
L_low	8.2	8.2
NSPD	2.5	2.5
EPG_gas	0.0063	0.0063
% Fossil DHW	100%	100%

LED Exit Sign Retrofit Kit

Savings calculations for LED exit sign retrofit kits were based on the following parameters:

- Baseline wattage of bulb;
- Wattage of energy efficient LED exit sign;
- Percentage of LED exit signs still in use;
- Annual operating hours; and
- Waste heat factor for energy.

The installation rate parameter is determined through the telephone surveys and on-site visits administered with participants of the program. The remaining parameters were determined through use of the Illinois Technical Reference Manual. ADM and MEEA agreed to treat all participants as either an elementary, middle/high school, or “other”.

The equation used to determine savings for all LED exit sign retrofit kits distributed through the program is listed below. Table 2-21 describes each parameter used in the equation.

Equation used to calculate gross annual kWh savings: $\Delta kWh = ((WattsBase - WattsEE) / 1000) \times HOURS \times WHFe \times ISR$

Table 2-21 Gross Impact Parameters-LED Exit Sign

<i>Parameter</i>	<i>Description</i>
WattsBase	Actual wattage if known
WattsEE	Actual wattage
HOURS	Annual operating hours
WHFe	Waste heat factor for energy
ISR	In service rate of LED Exit signs dependent on install method

The values used for the equation parameters are shown in Table 2-22.

Table 2-22 Gross Impact Parameters with Values Used-LED Exit Sign

<i>Parameter</i>	<i>Value Used</i>					
	<i>Elementary-Fluorescent</i>	<i>Middle/High school Fluorescent</i>	<i>Other</i>	<i>Elementary-Incandescent</i>	<i>Middle/High school Incandescent</i>	<i>Other</i>
WattsBase	11	11	11	35	35	35
WattsEE	4.5	4.5	4.5	4.5	4.5	4.5
HOURS	8,766	8,766	8,766	8,766	8,766	8,766
WHFe	1.21	1.23	1.24	1.21	1.23	1.24

2.2 Results of Gross Savings Estimation

2.2.1 Green Nozzle Program

The EPY6/GPY3 Green Nozzle Program originally reported that 790 energy efficient low-flow pre-rinse spray valves were distributed through the program. ADM reviewed program tracking data for errors such as duplicate or erroneous entries. The verification of the number of spray valves distributed through the program consisted of a review of notes and reports from ERC and DCEO. Program invoices were cross-checked with program tracking data to ensure that the final number of distributed valves claimed, and their associated savings matched sales data provided by ERC. ADM found no errors in the tracking data.

Two-hundred and two program participants were surveyed to verify measure installation. The in-service rate for the spray valves was found to be 91%.

ADM also completed follow-up surveys of EPY5/GPY2 Green Nozzle participants to see if additional measures were installed. At the time of EPY5/GPY2 reporting, ADM found an installation rate of 81%. ADM found that the installation rate for spray-valves distributed during EPY5/GPY2 had increased to 88% because an additional 39 nozzles had been installed since EPY5/GPY2 verification efforts were completed. Savings from the 39 additional installations are included in the tables below.

Ex ante and gross ex post savings are summarized in Table 2-23 and

<i>Utility</i>	<i>Ex Ante Therm Savings</i>	<i>Gross Ex Post Therm Savings</i>	<i>Gross Realization Rate</i>
Ameren	80,527	75,167	93%
Nicor	98,262	89,418	91%
North Shore	4,466	4,064	91%
Peoples	262,032	238,449	91%
Total	445,287	407,099	91%

Table 2-24. The gross ex post natural gas savings totaled 407,099. The gross ex post electric energy savings totaled 90,013 kWh. The program realization rate is 91%. Gross ex post savings were less than ex ante savings because not all of the low-flow pre-rinse spray valves were in use.

Table 2-23 Summary of Therm Savings for the Green Nozzle Program

<i>Utility</i>	<i>Ex Ante Therm Savings</i>	<i>Gross Ex Post Therm Savings</i>	<i>Gross Realization Rate</i>
Ameren	80,527	75,167	93%
Nicor	98,262	89,418	91%
North Shore	4,466	4,064	91%
Peoples	262,032	238,449	91%
Total	445,287	407,099	91%

Table 2-24 Summary of kWh Savings for the Green Nozzle Program

<i>Utility</i>	<i>Ex Ante kWh Savings</i>	<i>Gross Ex Post kWh Savings</i>	<i>Gross Realization Rate</i>
Ameren	-	90,013	91%
ComEd	-	-	-
Total	98,915	90,013	91%

2.2.2 Savings Through Efficient Products (STEP) Program

The STEP Program distributed 9,427³ energy efficiency measures to 289⁴ participants during the EPY6/GPY3 program year. ADM reviewed the tracking database for data entry errors such as duplicate or erroneous entries.

Table 2-25 shows the average annual per unit savings for the measures distributed through the STEP Program. The values are based on the TRM algorithms and assumptions described in Section 2.1.2.4.

³ This number includes measures that were returned throughout the program year.

⁴ 289 participants had walk-throughs but only 230 received measures. Two large suburban districts participated in walk-throughs but due to timing were not able to have the measure sent and installed in time.

Table 2-25 Average Annual per Unit Measure Savings by School Type

<i>Measure</i>	<i>Annual Gross Savings Elementary</i>	<i>Annual Gross Savings Middle/High School</i>	<i>Annual Gross Savings Other</i>
CFL	65.9 kWh	73.6 kWh	101.97 kWh
Aerator	9.3 Therm savings	27.8 Therm savings	12.36 Therm savings
Green Nozzle	366.8 Therm savings	366.8 Therm savings	366.8 Therm savings
LED Screw-in Bulb	138.79 kWh	138.79 kWh	138.79 kWh
Showerhead	81.54 kWh	81.54 kWh	81.54 kWh
LED Exit Sign	91.2 kWh (Fluorescent baseline) 345.8 kWh (Incandescent baseline)	92.7 kWh (Fluorescent baseline) 351.5 kWh (Incandescent baseline)	93.48 kWh (Fluorescent baseline) 354.36 kWh (Incandescent baseline)
LED Exit Sign Retrofit Kit	68.9 kWh (Fluorescent baseline) 323.5 kWh (Incandescent baseline)	70.1 kWh (Fluorescent baseline) 328.9 kWh (Incandescent baseline)	70.65 kWh (Fluorescent baseline) 331.53 kWh (Incandescent baseline)
Vending Machine Control	Glass Front Refrigerated: 1209.7 kWh Plastic Front Refrigerated: 1612.9 kWh Snack: 342.8 kWh		
Occupancy Sensors	kWh savings based on occupancy data		

Installation rates of measures distributed through the program were determined through on-site verification visits and telephone surveys of participants who received these measures. The overall measure installation rate for the STEP Program during EPY6/GPY3 is 95%. (98% installation rate for gas measures and 94% installation rate for electric measures) Table 2-26 shows installation rates for each measure type.

Table 2-26 Installation Rates by Measure

<i>Measure</i>	<i>Installation Rate</i>
Aerator	99%
CFLs (includes CFL with sensor)	100%
Green Nozzle	54%
LED Exit Sign	92%
LED Retrofit	77%
LED Screw-in bulb	99%
Occupancy Sensor (includes wall in switch)	95%
Showerheads	99%
Vending Machine Control	99%

The STEP program had a total of 74 participants in program year EPY5/GPY2, 71 of who received measures. ADM found that a majority of participants (85%) had not installed any measures at the time of the evaluation due to orders of measures not being received until the last two weeks of the program year (program year ended May 31, 2013). Due to this discovery, ADM and MEEA agreed

that EPY5/GPY2 program savings would be calculated only for schools that had received their orders prior to March 2013. This decision was made to allow participants additional time to install the measures. As a result of this decision, savings were calculated for 11 EPY5/GPY2 participating facilities for that program year. Savings calculations for the remaining 60 schools were completed during EPY6/GPY3 and are included in EPY6/GPY3 energy savings totals. ADM verified measures at 46 of the 60 participants. The installation rate for the measures installed was 81%.

Gross ex post electric savings are summarized in Table 2-27. The gross ex post electric energy savings during the June 2013 through May 2014 period total 2,660,909 kWh. The realization rate is 90%.

Table 2-27 Summary of kWh Savings for STEP Program

<i>Utility</i>	<i>Ex Ante kWh Savings</i>	<i>Gross Ex Post kWh Savings</i>	<i>Gross Realization Rate</i>
Ameren	193,168	176,952	92%
ComEd	2,765,205	2,483,957	90%
Total	2,958,373	2,660,909	90%

Gross ex post peak electric savings are summarized in Table 2-28. The gross ex post peak electric savings during the June 2013 through May 2014 period are 71.01 kW. The realization rate is 94%.

Table 2-28 Summary of Peak kW Savings for STEP Program

<i>Utility</i>	<i>Ex Ante kW Savings</i>	<i>Gross Ex Post kW Savings</i>	<i>Gross Realization Rate</i>
Ameren		7.10	
ComEd		63.91	
Total	75.54	71.01	94%

Gross ex post natural gas savings are summarized in Table 2-29. The gross ex post natural gas savings during the June 2013 through May 2014 period total 115,215 therms. The realization rate is 90%.

Table 2-29 Summary of Therm Savings for STEP Program

<i>Utility</i>	<i>Ex Ante Therm Savings</i>	<i>Gross Ex Post Therm Savings</i>	<i>Gross Realization Rate</i>
Ameren	13,296	12,332	93%
Nicor	86,705	78,008	90%
North Shore	15,434	13,925	90%
Peoples	12,287	10,950	89%
Total	127,722	115,215	90%

3. Estimation of Net Savings

This chapter reports the results of estimating the net impacts of the both the Green Nozzle and STEP Program during the period June 2013 through May 2014, where net savings represents the portion of gross savings achieved by program that can be attributed to the effects of the program.

3.1 Procedures Used To Estimate Net Savings

Net savings may be less than gross savings because of free ridership impacts, which arise to the extent that participants in a program would have adopted energy efficiency measures and achieved the observed energy changes even in the absence of the program. Free-riders for a program are defined as those participants that would have installed the same energy efficiency measures without the program.

The goal of free ridership analysis is to estimate the impacts of energy efficiency measures attributable to programs that are net of free ridership. That is, because the energy savings realized by free-riders are not induced by the program, these savings should not be included in the estimates of the program's actual impacts. Without adjustment for free ridership, some savings that would have occurred naturally would be attributed to the program. The measurement of the net impact of the program requires estimation of the marginal effect of the program over and above the "naturally occurring" patterns for installation and use of energy efficient equipment.

Information collected from a sample of program participants through a participant survey was used for the net-to-gross analysis. For the Green Nozzle Program, Appendix A provides a copy of the survey instrument, and Appendix B presents tabulated responses for each survey question. Appendix C provides a copy of the survey instrument used for the STEP Program and Appendix D presents the tabulated responses. Based on review of this information, the preponderance of evidence regarding free ridership inclinations was used to attribute a participant's savings to free ridership.

Three factors were analyzed to determine what percentage of savings may be attributed to free ridership. The three factors are:

- Plans and intentions of participant to install the equipment even without support from the program;
- Influence that the program had on the participants decision to install the equipment; and
- A participant's previous experience with similar energy efficient measures.

Participants were asked about their plans to purchase the equipment, or if they had planned on purchasing less equipment than was distributed through the program. Two binary variables were constructed to account for participants' plans and intentions to install the energy efficient equipment. One, based on a more restrictive set of criteria indicates a higher likelihood of free

ridership, and a second, based on less restrictive criteria indicates a relatively lower likelihood of free ridership.

The first, more restrictive criteria indicating participant plans and intentions to purchase the energy efficient equipment are as follows:

- The respondent answered “yes” to the following two questions: “Did you have plans to install the [Equipment] prior to participating in the [Program Name]?” and “Would you have gone ahead with this planned installation even if you had not participated in the [Program Name]?”
- The respondent answered “definitely would have installed” to the following question: “If the [Program Name] had not been available, how likely is it that you would have installed the [Equipment] anyway?”
- The respondent answers “no, the program did not affect the timing of the installation” to the question “Did you install the [Equipment] sooner than you would have had you not participated in the program?”

The second, less restrictive criteria accounting for participants’ plans and intentions are as follows:

- The respondent answered “yes” to the following two questions: “Did you have plans to install the [Equipment] prior to participating in the [Program Name]?” and “Would you have gone ahead with this planned installation even if you had not participated in the [Program Name]?”
- The respondent answered “definitely would have installed” or “probably would have installed” to the following question: “If the [Program Name] had not been available, how likely is it that you would have installed the [Equipment] anyway?”
- Either the respondent answered “no, the program did not affect the timing of the installation” to the question “Did you install the [Equipment] sooner than you would have had you not participated in the program?” or the respondent indicated that while program information and financial incentives did affect the timing of equipment installation, in the absence of the program they would have installed the equipment within the next two years.

The second factor involves determining if experience with the program or similar programs influenced participants’ decision to install the energy efficient equipment. The criteria indicating program influence that may signify a lower level of free ridership is as follows:

- The respondent answered “yes” to the question “Did a representative of the [Program Name] recommend that you install the [equipment]?” and “probably would not have” or “definitely would not have” to the question: “If the [Program Name] representative had not recommended that you install the [equipment], how likely is it that you would have done it anyway?”

The third factor requires determining if a participant in the program indicated that he or she had previous experience with energy efficiency improvements. A participant indicating that he or she had implemented a similar measure is considered to have a higher likelihood of free ridership.

The criteria indicating that previous experience may signify a higher likelihood of free ridership are as follows:

- The respondent answered “yes” to the following question: “Before participating in the [Program Name], has you installed any [Similar Equipment]?”
- The respondent answered “yes” to the question “Has your organization purchased any equipment to improve energy efficiency in the last three years for which you did not apply for financial assistance through an energy efficiency program?”

The four sets of rules described above were used to construct four different indicator variables that address free ridership behavior. For each participant, a free ridership value was assigned based on the combination of variables. With the four indicator variables, there were 11 applicable combinations for assigning free ridership scores for each respondent, depending on the combination of answers to the questions creating the indicator variables. Table 3-1 shows these values.

Table 3-1 Free Ridership Scores for Combinations of Indicator Variable Responses

<i>Indicator Variables</i>				<i>Free Ridership Score</i>
<i>Had Plans and Intentions to Install Measure without the Program? (Definition 1)</i>	<i>Had Plans and Intentions to Install Measure without the Program? (Definition 2)</i>	<i>Program had influence on Decision to Install Measure?</i>	<i>Had Previous Experience with Measure?</i>	
Y	N/A	Y	Y	100%
Y	N/A	N	N	100%
Y	N/A	N	Y	100%
Y	N/A	Y	N	67%
N	Y	N	Y	67%
N	N	N	Y	33%
N	Y	N	N	33%
N	Y	Y	Y	33%
N	Y	Y	N	0%
N	N	N	N	0%
N	N	Y	N	0%
N	N	Y	Y	0%

3.2 Results of Net Savings Estimation for Green Nozzle Program

The procedures described in the preceding section were used to estimate free ridership rates and net-to-gross ratio for the Green Nozzle Program for the period June 2013 through May 2014.

The data used to assign free ridership scores to EPY6/GPY3 participants were collected through a survey of 22 decision makers who installed low-flow pre-rinse spray valves during the period June 2013 through May 2014.

Table 3-2 shows percentages of gross ex post electric energy savings associated with different combinations of free ridership indicator variable values. Table 3-3 shows percentages of total gross

ex post natural gas savings associated with different combinations of free ridership indicator variable values.

Table 3-2 Estimated Free-ridership for Green Nozzle kWh Savings

<i>Had Plans and Intentions to Install Measure without Program? (Definition 1)</i>	<i>Had Plans and Intentions to Install Measure without Program? (Definition 2)</i>	<i>Program had Influence on Decision to Install Measure?</i>	<i>Had Previous Experience with Measure?</i>	<i>Percentage of Realized kWh Savings</i>	<i>Free Rider Ship Score</i>
N	N	Y	N	100%	0%
Total				100%	0%

Table 3-3 Estimated Free-ridership for Green Nozzle Therm Savings

<i>Had Plans and Intentions to Install Measure without Program? (Definition 1)</i>	<i>Had Plans and Intentions to Install Measure without Program? (Definition 2)</i>	<i>Program had Influence on Decision to Install Measure?</i>	<i>Had Previous Experience with Measure?</i>	<i>Percentage of Realized Therm Savings</i>	<i>Free Rider Ship Score</i>
N	Y	Y	N	4%	0%
N	N	N	N	42%	0%
N	N	Y	N	54%	0%
Total				100%	0%

Net savings for participants that received low-flow pre-rinse spray valves during EPY5/GPY2 and installed them during EPY6/GPY3 were developed using the net-to-gross ratio for EPY5/GPY2 survey respondents.

The net ex post kWh and therm savings for the Green Nozzle Program during the period June 2013 through May 2014 are summarized in Table 3-4 and Table 3-5, respectively. During this period, net ex post kWh savings total 90,013 and net ex post therm savings total 407,099. The EPY6/GPY3 net-to-gross ratio is 100% for both fuel types.

Table 3-4 Summary of Green Nozzle Program Net kWh Savings

<i>Utility</i>	<i>Ex Ante kWh Savings</i>	<i>Gross Ex Post kWh Savings</i>	<i>Gross Realization Rate</i>	<i>Net Ex Post kWh Savings</i>	<i>Net-to-Gross Ratio</i>
Ameren	98,915	90,013	91%	90,013	100%
ComEd		-		-	100%
Total	98,915	90,013	91%	90,013	100%

Table 3-5 Summary of Green Nozzle Program Net Therm Savings

<i>Utility</i>	<i>Ex Ante Therm Savings</i>	<i>Gross Ex Post Therm Savings</i>	<i>Gross Realization Rate</i>	<i>Net Ex Post Therm Savings</i>	<i>Net-to-Gross Ratio</i>
Ameren	80,527	75,167	93%	75,167	100%
Nicor	98,262	89,418	91%	89,418	100%

North Shore Peoples	4,466	4,064	91%	4,064	100%
Peoples	262,032	238,449	91%	238,449	100%
Total	445,287	407,099	91%	407,099	100%

3.3 Results of Net Savings Estimation for STEP Program

The procedures described in Section 3.1 were used to estimate free ridership rates and net-to-gross ratios for the STEP Program for the period June 2013 through May 2014.

3.3.1 Net Ex Post kWh and Therm savings

The data used to assign free ridership scores were collected through a participant survey of three participant decision makers for projects completed during the period June 2013 through May 2014. Multiple attempts were made to obtain additional survey responses but these were ultimately unsuccessful. Respondents to the survey represented 40% of the therm savings and 45% of the kWh savings associated with projects completed through the program.

Table 3-6 and Table 3-7 show the percentage of survey respondents who relayed the following: The participant had plans and intentions to install the equipment in the facility without assistance from the program (under two alternative definitions as described in the preceding section), the program influenced the participant's decision to install the equipment, or the participant previously implemented a similar measure without a program incentive during the last three years. Percentages reported are averages weighted by project gross ex post kWh and therm savings.

Table 3-6 Estimated Free-Ridership for Program kWh Savings

<i>Had Plans and Intentions to Implement Measure without Program? (Definition 1)</i>	<i>Had Plans and Intentions to Implement Measure without Program? (Definition 2)</i>	<i>Program had influence on Decision to Implement Measure?</i>	<i>Had Previous Experience with Measure?</i>	<i>Percentage of Total Realized Gross kWh Savings</i>	<i>Free Ridership Score</i>
N	N	N	Y	8.9%	33%
N	N	N	N	70.2%	0%
N	N	Y	N	15.6%	0%
N	N	Y	Y	5.3%	0%
Total				100.0%	2.9%

Table 3-7 Estimated Free-Ridership for Program Therm Savings

<i>Had Plans and Intentions to Implement Measure without Program? (Definition 1)</i>	<i>Had Plans and Intentions to Implement Measure without Program? (Definition 2)</i>	<i>Program had influence on Decision to Implement Measure?</i>	<i>Had Previous Experience with Measure?</i>	<i>Percentage of Total Realized Gross Therm Savings</i>	<i>Free Ridership Score</i>
N	N	N	Y	0.6%	33%
N	N	N	N	77.5%	0%
N	N	Y	N	20.1%	0%
N	N	Y	Y	1.8%	0%
Total				100.0%	0.2%

The net-to-gross ratio based on EPY5/GPY2 participant survey responses was used to develop net savings for participants that received their measures during EPY5/GPY2 but did not install them until EPY6/GPY3.

The net ex post electric savings for the STEP Program during the period June 2013 through May 2014 are summarized in Table 3-8. During this period, net ex post kWh savings total 2,595,864 kWh. The net to gross ratio is 98%.

Table 3-8 Summary of STEP Program Net kWh Savings

<i>Utility</i>	<i>Ex Ante kWh Savings</i>	<i>Gross Ex Post kWh Savings</i>	<i>Gross Realization Rate</i>	<i>Net Ex Post kWh Savings</i>	<i>Net-to-Gross Ratio</i>
Ameren	193,168	176,952	92%	172,399	97%
ComEd	2,765,205	2,483,957	90%	2,423,464	98%
Total	2,958,373	2,660,909	90%	2,595,864	98%

The net ex post peak electric savings for the STEP Program during the period June 2013 through May 2014 are summarized in Table 3-9. During this period, net ex post peak savings total 65.77 kW. The net to gross ratio is 93%.

Table 3-9 Summary of STEP Program Net kW Savings

<i>Utility</i>	<i>Ex Ante kW Savings</i>	<i>Gross Ex Post kW Savings</i>	<i>Gross Realization Rate</i>	<i>Net Ex Post kW Savings</i>	<i>Net-to-Gross Ratio</i>
Ameren	7.55	7.10	94%	6.58	93%
ComEd	67.99	63.91	94%	59.19	93%
Total	75.54	71.01	94%	65.77	93%

The net ex post therm savings for the STEP Program during the period June 2013 through May 2014 are summarized in Table 3-10. During this period, net ex post therm savings total 114,998. The net to gross ratio rounds to 100%.

Table 3-10 Summary of STEP Program Net Therm Savings

<i>Utility</i>	<i>Ex Ante Therm Savings</i>	<i>Gross Ex Post Therm Savings</i>	<i>Gross Realization Rate</i>	<i>Net Ex Post Therm Savings</i>	<i>Net-to-Gross Ratio</i>
Ameren	13,296	12,332	93%	12,312	100%
Nicor	86,705	78,008	90%	77,859	100%
North Shore	15,434	13,925	90%	13,899	100%
Peoples	12,287	10,950	89%	10,928	100%
Total	127,722	115,215	90%	114,998	100%

4. Process Evaluation

This chapter presents the results of the process evaluation for the Green Nozzle and STEP Programs. The process evaluation focuses on the effectiveness of program policies, organization, and the program delivery framework. The purpose of the process evaluation is to assess the design and recent results of the programs in order to determine how effectively the program is achieving its intended outcome. This evaluation is based upon analysis of program structures and interviews of program staff and program participants.

The chapter begins with a discussion of the overall progress of the programs. This is followed by an examination of issues that are critical to the future success of the program. This chapter also presents strategic planning and process recommendations, and highlights key findings from the interviews of program staff and participants. Conclusions, recommendations, and other findings from the process evaluation may be useful for comparing program years over time, and in conducting planning efforts for future program years.

4.1 Evaluation Objectives

The purpose of the process evaluation is to examine program operations and results throughout the program operating year, and to identify potential program improvements that may prospectively increase program efficiency or effectiveness in terms of participation level and program satisfaction. This process evaluation was designed to document the operations and delivery of the Green Nozzle and STEP Programs during EPY6/GPY3, defined as the period from June 2013 to May 2014.

Key research questions to be addressed by this evaluation of EPY6/GPY3 activity include:

- Was the programs delivery effective and successful?
- What changes, if any, have occurred in the program administration and delivery?
- Were program participants satisfied with the program and the measures they received?

During the evaluation, data and information from numerous sources were analyzed to achieve the stated research objectives. Insight into the participant experience with the Green Nozzle Program was gathered from brief telephone surveys of program participants. Insight into the participant experience with the STEP Program was developed from an email and telephone survey of program participants.

4.2 Summary of Primary Data Collection

- **Participant Surveys:** Surveys of participants who received products through the programs are the primary data source for understanding the participant perspective. The participant surveys provided feedback and insight regarding their experiences with the Green Nozzle and STEP Programs. Respondents reported on their satisfaction with the program, detailed their motivations and what factors affected their decision making process, and provided

recommendations on how to improve the program. In total, 22 participants in the Green Nozzle Program and 20 participants in the STEP Program completed the survey.

- **Program Staff Interviews:** Interviews with program staff helped develop an understanding of how the program operates, challenges the program faced, the level of interest in the program, and future changes planned for the program.
- **Program Documentation:** Review of program documents including the program website, reporting developed by program staff, program tracking data, and savings calculation spreadsheets provided additional insight into program operations.

4.3 Summary of Conclusions and Recommendations

The following presents a selection of key findings from the EPY6/GPY3 program year:

- **Green Nozzle and STEP Program Participants Satisfied with Program and Measures:** Participants in both programs were generally satisfied with the program, and equipment they received. The majority of the STEP program survey respondents indicated that they were either satisfied or very satisfied with their overall program experience. Only three of the Green Nozzle Program survey respondents indicated that they were dissatisfied with the program, while 64% of respondents stated that they were satisfied or very satisfied.
- **Mixed Levels of Satisfaction with Pre-Rinse Spray Valves:** Approximately 35% of participant survey respondents indicated that their expectations were not met or mostly met. Additionally, half of the survey respondents indicated that they did not have the pre-rinse spray valves installed. This low install rate contrasted with findings from a broader verification effort of 180 participants conducted by email and telephone. Analysis of the combined responses found that 91% of the distributed spray valves were installed.
- **CFLS, Occupancy Sensors, and Aerators Most Popular Measures:** The measures of most interest among STEP program participants overall were CFL bulbs, occupancy sensors, and aerators. The measures with the lowest level of interest were vending machine controls. One possible reason for the low interest in vending machine controls is that not all facilities have vending machines, and those that do have only a few machines. When considering popularity of measures by organization type, occupancy sensors and exit signs were most popular with schools. For high schools and park districts (with recreation centers), showerheads were a popular measure.
- **Potential for Improvement to Green Nozzle and STEP Program Data:** There were some limitations to the program tracking data provided by the Green Nozzle and STEP Programs. There were two main issues; missing data and additional data that would have been beneficial to collect. These issues were resolved through consultations with implementation staff.
- **Measure Tracking System Implemented:** For the upcoming program year, the MEEA team plans to work with FedEx to track products being distributed to participants of the STEP program. They will be able to track when people have received the products and who

signed for the products. The product packaging will include the Illinois Energy Now brand and instructions for how to return the products will be included.

The following recommendations are offered in the interest of continuing to develop the programs' strategic advantages during coming program years:

- **Green Nozzle Program Should Collect Additional Data:** Green Nozzle program staff should collect additional information from participants applying for the program including participant email addresses and utility service provider. Participant contact information is necessary for data collection and program correspondence, and utility information is needed to meet reporting requirements. This issue will likely be resolved as the measure is integrated into the STEP program.
- **Consider Collecting Additional during STEP Program Walk-Throughs:** A few program participants reported that they received equipment that they were unable to install due to conditions that prevented the installation (e.g., low flow devices not fitting plumbing fixtures). It may be possible for program staff to improve the walk-through process by collecting additional information related to the installation of the efficiency measures. This information would include plumbing fixture size for low-flow equipment and wiring requirements for occupancy sensors.

4.4 Green Nozzle Program

4.4.1 Program Overview

The Green Nozzle Program offers low-flow pre-rinse spray valves to public sector food preparation facilities at no cost to the program participant. The Green Nozzle Program is a program implemented by DCEO's partner, the Energy Resources Center (ERC) located at the University of Illinois at Chicago. The 2013-2014 program year marked the second year of the program. The goal of the program is to increase energy savings by replacing high flow spray valves. During EPY6/GPY3, the program distributed a spray valve model with a flow rate of .65 gpm. The Green Nozzle Program pays \$54.95 per spray valve, although they are offered to program participants at no cost.

Most spray valves distributed through the program are distributed to participants who request them by contacting a program staff member at the ERC. After receiving an email or telephone request, the spray valves are mailed to the program participant. The program requests that the participants return the replaced spray valves but there has not been a consistent response to this request. Program staff contact the participants verify that the valves were received and installed. Spray valves are also distributed by Utilivate and the Energy 360 Group, other organizations that help assist the implementation efforts of DCEO programs. These organizations have contact information for potential participants.

4.4.2 Review of Program Tracking Data

ADM reviewed program tracking data in multiple spreadsheets for the Green Nozzle Program provided by the program implementation staff. Two ongoing issues with the tracking data still exist from last program year:

- **Utility Service Provider:** The current tracking data do not consistently identify which utilities serve which participant sites. This information is needed in order to apportion program savings for the respective participating utility.
- **Participant Email:** Participant contact information was included in some, but not all, of the tracking data provided. The inclusion of participant email address and telephone number as fields will provide program staff and evaluator staff an additional means of contacting participants.

One change to the tracking data for EPY6/GPY3 was the addition of water heating fuel types to the tracking data.

4.4.3 Participant Outcomes

A telephone survey was conducted with participants to collect information on the Green Nozzle Program including factors affecting decision-making, participant preferences, and opinions on the program. The goal of the survey was to better understand participant decision making behaviors and identify trends in participant responses.

The sample size for the participant survey was 22 responses from 285 participants contacted to complete the survey, which represents a 7% response rate. It is important to note that additional verification efforts were made that resulted in the collection of data on installations for an additional 180 participants.

Some comments and issues raised by participants are anecdotal in nature and may reflect individual participant opinions. The Conclusions and Recommendations section of the Process Evaluation chapter provides an overall distillation of key findings from the process evaluation activities that were performed for the Green Nozzle Program.

4.4.4 Factors Affecting Participant Participation

Participants were asked what influence the Green Nozzle Program had on their decision to install the low-flow pre-rinse spray valves. Nearly all respondents reported that they did not have plans to install low-flow spray valves prior to participating in the program. Participants were asked whether a program representative recommended installing the low-flow pre-rinse spray valves. Sixty-four percent of the respondents indicated that a program staff member recommended the spray valves, and 93% of these participants stated that they probably or definitely would not have installed the spray valves if they had not received the recommendation.

4.4.5 Energy Efficiency Behaviors and Decision Making

Survey respondents were asked about their previous experience with purchasing energy efficient equipment. As shown in Table 4-1, 18% of the survey respondents reported that they had previously purchased energy efficient equipment without seeking a financial incentive. Of these respondents, the largest share (50%) said that they did not apply for incentives because they did not know that incentives were available for the equipment or they did not think the equipment qualified. An additional 41% reported that they had purchased energy efficient equipment and received a financial incentive for that equipment. Thirty-two percent of survey respondents reported that they had not purchased energy efficient equipment in the last three years.

Table 4-1 Prior Experience with Energy Efficiency Equipment

	<i>Response</i>	<i>Percent of Respondents (n=22)</i>
Has your organization purchased any equipment to improve energy efficiency in the last three years for which you did not apply for financial assistance through an energy efficiency program?	Yes, purchased equipment but did not seek financial assistance.	18%
	No equipment was purchased	32%
	No, financial assistance was sought	41%
	Don't know	9%

A sizable share of participants had installed energy efficiency equipment in the last three years (18%), and a significant portion of participants had sought financial assistance for energy efficiency equipment but had not purchased it (41%). However, as shown in Table 4-2, only 9% of respondents reported that they had ever previously installed low-flow pre-rinse spray valves. This finding suggests that although most program participants had some experience with energy efficient equipment, they had little previous experience with this measure.

Table 4-2 Prior Experience with Low-Flow Pre-Rinse Spray Valves

	<i>Response</i>	<i>Percent of Respondents (n=22)</i>
Before participating in the Green Nozzle Program, had you installed any low-flow pre-rinse spray valves?	Yes	9%
	No	91%
	Don't know	0%

4.4.6 Program Participation Process

No participants reported problems with receiving the spray valves. As shown in Table 4-3, 100% of the respondents reported that they received all of the spray valves they were expecting. Program tracking data also confirmed that all participants received their nozzles this year, which is an improvement from last year when three participants reported not receiving the nozzles. Furthermore, none of the participants stated that the spray valves they received were broken.

Table 4-3 Experience with Receipt of Low-Flow Pre-Rinse Spray Valves

<i>Question</i>	<i>Percent of Respondents Saying Yes</i>	<i>N</i>
Did you receive all of the low-flow pre-rinse spray valves that you were expecting?	100%	22
Were any of the low-flow pre-rinse spray valves broken?	0%	22

Forty-five percent of respondents indicated that the spray valves were not currently installed, and were asked why the spray valves were not installed. The most frequent explanation was that the participant indicated that they did not like the low-flow spray valves because they were perceived as being less effective and/or that the water spray pattern was less controlled.

Other explanations were that the installation was a low priority or that the spray valves would be used as spares and installed when needed. Lastly, one respondent indicated that their valve was installed, but cracked during use.

ADM analysts were able to verify through additional emails and phone calls that 91% of all nozzles (low-flow pre-rinse spray valves) distributed were installed.

Table 4-4 Installation of Low-Flow Pre-Rinse Spray Valves

Are all of the low-flow pre-rinse spray valves that you received currently installed?	<i>Response</i>	<i>Percent of Respondents (n=22)</i>
	Yes	
No		45%
Don't know		0%

4.4.7 Participant Satisfaction

Respondents were asked whether or not the low-flow pre-rinse spray valves met their expectations. One-half of the respondents indicated that their expectations were met or exceeded, while another 9% indicated that the spray valves mostly met their expectations. Thirty percent of respondents indicated that their expectations were mostly met or were not met. These respondents stated that the valves did not meet their expectations because the spray valves were less effective for cleaning, the water spray was less controlled, or because they had not yet used them. Although the sample size is small, there is indication that a significant number of participants are not completely satisfied with the performance of the nozzle. This is consistent with other research that has found dissatisfaction with the performance of spray valves with a flow rate of less than 1.0 gpm⁵. ADM will continue to monitor participant satisfaction trends in future program years.

⁵ U.S. Environmental Protection Agency (2011). *Pre-Rinse Spray Valves Field Study Report*.

Table 4-5 Satisfaction of Participants Expectations

	<i>Response</i>	<i>Percent of Respondents (n= 22)</i>
Did the low-flow pre-rinse spray valves meet your expectations?	My expectations were exceeded	14%
	My expectations were met	36%
	My expectations were mostly met	9%
	My expectations were not met	23%
	Don't know	18%

Sixty-four percent of survey respondents reported that they were either satisfied or very satisfied with the Green Nozzle Program, and three respondents were dissatisfied or very dissatisfied with the program. The reasons given for dissatisfaction were related to their experience with the quality and performance of the valves. However, it is important to note that these represented a minority of participants.

Table 4-6 Participant Satisfaction with the Green Nozzle Program

	<i>Response</i>	<i>Percent of Respondents (n= 22)</i>
Overall, how satisfied are you with the Green Nozzle Program?	Very satisfied	45%
	Satisfied	18%
	Neither satisfied nor dissatisfied	23%
	Dissatisfied	9%
	Very Dissatisfied	5%
	Don't know	0%

4.4.8 Participant Recommendations and Overall Impressions

At several points in the survey, participants were asked open-ended questions about suggestions for the program or to remark on their experiences with the program. Most of these comments were positive in nature. One participant indicated that they are participating in another DCEO Program this year. Another participant stated that they were grateful that the equipment was supplied at no cost and believed the program is very beneficial to public sector entities.

The only suggestion provided by survey respondents was to consider making an equipment option available for outdoor use as well.

4.5 STEP Program

The Savings Through Efficient Products (STEP) Program is a modified self-install program implemented by the Midwest Energy Efficiency Alliance (MEEA) with assistance from their three implementation partners: Applied Proactive Technologies, Inc., the Energy Resources Center, and Green Home Experts. EPY5/GPY2 was the pilot year for the program and operations began in November 2012.

4.5.1 Program Overview

The STEP Program provides energy saving equipment to program participants at no cost. The equipment provided through the program is mailed to participants and self-installed. The program offers a variety of energy efficiency measures to participants, including LED exit signs and lamps, CFLs, low-flow showerheads, faucet aerators, low-flow pre-rinse spray valves, occupancy sensors, and vending machine controls.

In order to qualify for the program, applicants must receive utility service from one of the area's investor owned utilities: Ameren, ComEd, Nicor Gas, Peoples Gas, or North Shore Gas. During the pilot year previous participation in the Lights for Learning® Program was required, but this is no longer a requirement.

Once applicants are approved for participation, program staff performs a facility walk-through. The purpose of the walk-through is to identify potential measures that may be installed at the facility. The identification of these measures begins with a discussion with facility staff to determine which types of measures they may be interested in. A STEP engineer and facility staff use a form to collect information about the quantities for each measure type to be installed and parameters needed to estimate savings (e.g. Baseline wattage, type of existing lamps).

Green Home Experts fulfills the orders for the recommended self-install measures that were identified during the walk-throughs. These measures are sent to participants along with a form that participants sign indicating that they have received the measures and affirming their commitment to installing them within four months. Once the participants install the measures they either complete a self-verification report form, or program staff complete a verification visit. Participants who elect to complete the self-verification form indicate the number of each measure received, where the measure was installed, and submit an example picture of the installation. Participants are to return any uninstalled measures. Program staff reviews the quantities to verify that participants installed all measures sent, or returned uninstalled measures. The photographs are used to verify that the measures were installed correctly.

After the installation of measures is completed, a report is sent to the participant that details the recommended self-install measures and estimated energy savings associated with the measures. The report also provides information on incentives that are available through DCEO's other programs to encourage participants to implement measures in addition to those implemented through the STEP Program. The information provided includes incentive amounts and how to apply.

4.5.2 Program Operations

Interviews were conducted with MEEA program staff to better understand how the program is progressing. Staff were specifically asked to comment on EPY6/GPY3 participation trends, changes that occurred, and any success and challenges that exist. Below is a summary of the key findings from staff interviews:

- **Increased Diversity of Program Participants:** In PY5, the STEP Program was only open to schools; initially targeting those schools that had previously participated in the Lights for

Leaning Program. During EPY6/GPY3 the STEP program expanded to include all public sector schools, parks, libraries, and municipalities in Illinois. Staff indicated that 57% of the participants were schools, 33% were parks, 8% were municipalities. Other new facility types included libraries, fire houses, 911 centers, county jails, and courthouses.

- **Minor Changes to Eligible Measures:** There were two primarily changes made to the list of eligible energy efficiency measures. The program now includes two types of occupancy sensors available to participants, single and dual. In addition, the program staff replaced a dimmable CFL with a lower cost standard CFL. Staff indicated that the change resulted in lower measure costs with same level of energy savings, and in turn improved the cost effectiveness of the program overall.
- **Wait List Created To Improve Program Logistics:** This program year, a wait list was created for program applications interested in scheduling initial walkthroughs at the end of PY6 and used to organize for PY7. The wait list allows for program staff to systematically schedule these visits according to geographic location and staff availability. Staff indicated that this procedural change will enhance the participant outreach effort and improve travel logistics for staff responsible for conducting the walkthroughs
- **Limited Amount of Time to Install Measures:** In the previous program year, there was a maximum incentive amount of \$5,000 per participant and a time limit of 6 months to install the measures once received. This program year, the incentive cap was lifted and the time frame was shortened to 4 months. The change was made to encourage faster measure installation and to provide staff with more time for end of year reporting. Additionally, in the prior year walkthroughs were conducted far in advance of participants receiving the products due to budgetary constraints. Funding was released later resulting in facilities that did not have time available for installation. As a result of the lapse in time, many potential participants were no longer interested in installation of the measures. Staff members are working to decrease the amount of time between walkthroughs and installation of measures.

4.5.3 Participant Outcomes

Telephone and online surveys were conducted to collect data about participant decision-making, preferences, and opinions of the STEP Program. Out of 83 participants, twenty program participants responded to the survey.

Information in this section highlights participant decision making behaviors and identifies notable trends in participant responses. Some comments and issues raised by participants are anecdotal in nature and may reflect individual participant opinions. The Conclusions and Recommendations section of the Process Evaluation chapter provides an overall distillation of key findings from the process evaluation activities that were performed for the STEP Program.

It is important to note that while the survey results discussed below are used as inputs for the calculation of estimated free ridership, participant responses to individual survey items do not in isolation from additional factors imply specific levels of free-ridership. Chapter 3 details the

methodology used to estimate free ridership based on survey response data, while this chapter provides a qualitative discussion of participant responses.

4.5.4 How Participants Learn About the Program

Table 4-7 displays sources program participants identified for learning about the STEP Program. Survey respondents reported learning about the program from a wide-range of sources. Of the fourteen sources reported, the most common sources were the Smart Energy Design Assistance Center, conferences, workshops or seminars, and the informational brochures provided by the STEP program.

Table 4-7 How Participants Learned of the STEP Program

	<i>Response</i>	<i>Percent of Respondents* (n=20)</i>
How did you learn of the STEP Program?	Approached directly by a representative of the STEP Program	25%
	Received an informational brochure on the STEP Program	35%
	A DCEO representative mentioned it	25%
	The DCEO website	30%
	A Midwest Energy Efficiency Alliance (MEEA) representative mentioned it	20%
	A Smart Energy Design Assistance Center (SEDAC) representative mentioned it	35%
	A utility representative	5%
	Friends or colleagues	15%
	An architect, engineer, or energy consultant	10%
	Attended a conference, workshop or seminar	35%
	An energy service company	10%
	Past experience with the program	5%
	Equipment vendors or building contractors	5%
	Other	10%
Don't know	0%	

*Since respondents were able to select more than one response, the sum of the percentages in the table above can exceed 100%.

4.5.5 Factors Affecting Making Energy Efficiency Improvements

Participants were asked about the influence of the STEP Program on their decision to implement the energy efficient equipment installed. It should be noted that responses to individual survey items may be used to characterize certain aspects of a decision maker's program perspective or implementation behavior, but it is necessary to analyze the full set of a respondent's survey responses in order to estimate an accurate and reliable net-to-gross percentage. In addition to gauging participants' preexisting plans and intentions, it is important to consider how the program affected factors such as the timing and overall efficiency level of the project. Chapter 3 outlines the full net-to-gross estimation methodology that is applied to survey results for this evaluation.

Participants were asked about the influence of the STEP Program on their decision to install the energy efficiency measures at their facility. As shown in Table 4-8, Twenty-five percent of the participants indicated that they had prior plans to install the equipment at their facility and 30%

indicated that they could have afforded to make the improvements without the assistance provided by the program.

Table 4-8 Reported Prior Plans to and Financial Ability to Install

<i>Question</i>	<i>Percent of Respondents Saying Yes</i>	<i>n</i>
Would you have been financially able to install the Self-Install Equipment if it had not been provided at no-cost through the STEP Program?	30%	6
Did you have plans to install the Self-Install Equipment before participating in the STEP Program?	25%	5

Overall, the survey responses suggest that the program was influential to the participants' decisions to implement the energy efficient equipment. However, as previously stated, the net savings are based on the net-to-gross methodology outlined in Chapter 3.

4.5.6 Participant Satisfaction with the Program and the Participation Process

Respondents rated their levels of satisfaction with selected aspects of the program on a scale ranging from very dissatisfied to very satisfied. The results are shown in Table 4-9. None of the survey respondents reported dissatisfaction with any of the program elements and all twenty respondents indicated that they were satisfied or very satisfied with the program overall.

Table 4-9 Overall Program Satisfaction

	<i>Response</i>	<i>Percent of Respondents (n= 20)</i>
How would you rate your satisfaction with the overall program experience?	Very satisfied	45%
	Satisfied	55%
	Neither satisfied nor dissatisfied	0%
	Dissatisfied	0%
	Very Dissatisfied	0%
	Not Applicable/ Don't know	0%

In addition to the assessment of their satisfaction with the program, surveyed participants were also asked a number of questions related to their participation in the program and any issues that may have arisen during their program experiences.

One participant said equipment was not delivered due to employee turnover while another participant said they were not able to install the aerators because they did not fit their buildings' equipment. Two participants answered that the wrong occupancy sensors were sent. Lastly, one participant's building was not wired properly for the equipment. None of the participants reported that the equipment they received was broken.

The majority of the survey respondents indicated that the installation of the equipment went smoothly and 90% responded that the measures they installed met or exceeded their expectations. Sixty-five percent of participants indicated that they completed a self-verification of the project, and of those 12 respondents, 11 indicated that the self-verification went well.

Six participants indicated that their organization did not install all of the self-install equipment. The equipment that was not installed included replacement aerators and occupancy motion sensors that were previously discussed.

Thirty five percent of survey respondents stated that they reviewed the program-provided report that describes the measures to be sent, the savings associated with the measures, and descriptions of incentive programs offered by DCEO. Of the participants who reviewed the report, 86% stated that the report was either very or somewhat useful. This is summarized in Table 4-10. Overall, participants in the program noted few difficulties with the participation process, receiving and installing the measures, and verifying the equipment installation.

Table 4-10 Usefulness of Report Information

	<i>Response</i>	<i>Percent of Respondents (n= 7)</i>
How useful was the information provided in the report?	Very useful	43%
	Somewhat useful	43%
	Not at all useful	0%
	Don't know	14%

5. Conclusions and Recommendations

The EPY6/GPY3 program year was the second year of operations for both the Green Nozzle and STEP Programs. As is to be expected for the programs' inaugural year, there are potential improvements for both of these programs that would improve their delivery. This chapter summarizes the findings and recommendations for program improvement.

5.1 Key Conclusions

The following presents a selection of key findings from the EPY6/GPY3 program year:

- **Green Nozzle and STEP Program Participants Satisfied with Program and Measures:** Participants in both programs were generally satisfied with the program, and equipment they received. The majority of the STEP program survey respondents indicated that they were either satisfied or very satisfied with their overall program experience. Only three of the Green Nozzle Program survey respondents indicated that they were dissatisfied with the program, while 64% of respondents stated that they were satisfied or very satisfied.
- **Mixed Levels of Satisfaction with Pre-Rinse Spray Valves:** Approximately 35% of participant survey respondents indicated that their expectations were not met or mostly met. Additionally, half of the survey respondents indicated that they did not have the pre-rinse spray valves installed. This low install rate contrasted with findings from a broader verification effort of 180 participants conducted by email and telephone. Analysis of the combined responses found that 91% of the distributed spray valves were installed.
- **CFLS, Occupancy Sensors, and Aerators Most Popular Measures:** The measures of most interest among STEP program participants overall were CFL bulbs, occupancy sensors, and aerators. The measures with the lowest level of interest were vending machine controls. One possible reason for the low interest in vending machine controls is that not all facilities have vending machines, and those that do have only a few machines. When considering popularity of measures by organization type, occupancy sensors and exit signs were most popular with schools. For high schools and park districts (with recreation centers), showerheads were a popular measure.
- **Potential for Improvement to Green Nozzle and STEP Program Data:** There were some limitations to the program tracking data provided by the Green Nozzle and STEP Programs. There were two main issues; missing data and additional data that would have been beneficial to collect. These issues were resolved through consultations with implementation staff.
- **Measure Tracking System Implemented:** For the upcoming program year, the MEEA team plans to work with FedEx to track products being distributed to participants of the STEP program. They will be able to track when people have received the products and who signed for the products. The product packaging will include the Illinois Energy Now brand and instructions for how to return the products will be included.

The following recommendations are offered in the interest of continuing to develop the programs' strategic advantages during coming program years:

- **Green Nozzle Program Should Collect Additional Data:** Green Nozzle program staff should collect additional information from participants applying for the program including participant email addresses and utility service provider. Participant contact information is necessary for data collection and program correspondence, and utility information is needed to meet reporting requirements. This issue will likely be resolved as the measure is integrated into the STEP program.
- **Consider Collecting Additional during STEP Program Walk-Throughs:** A few program participants reported that they received equipment that they were unable to install due to conditions that prevented the installation (e.g., low flow devices not fitting plumbing fixtures). It may be possible for program staff to improve the walk-through process by collecting additional information related to the installation of the efficiency measures. This information would include plumbing fixture size for low-flow equipment and wiring requirements for occupancy sensors.

Appendix A: Green Nozzle Survey

Hello, may I please speak with [Contract Name]?

My name is ___ and I'm calling, on behalf of the Illinois Department of Commerce & Economic Opportunity (the DCEO). According to our records your organization received [number of nozzles] low-flow pre-rinse spray valves through the Green Nozzle Program.

We are interested in your experience with the Green Nozzle Program and any feedback you may have. DCEO plans to use this information to improve the energy efficiency programs. The survey should take less than 10 minutes. Is now a good time to talk? [If not: Can you suggest a time when I could call you back?]

You are shown as the contact person for your organization's participation in the program. Is that correct?

No (Who is the contact person?)

Name: _____

Title: _____

Phone Number: _____

Yes (Continue)

1. According to our records you received [number of nozzles] low-flow pre-rinse spray valve (s) through the program. Is this correct?

Yes

No (If checked, go to 1A)

Don't know

1A. How many low-flow pre-rinse spray valves did you receive?

2. Are all of the low-flow pre-rinse spray valves that you received currently installed?

Yes

No (If checked, go to 2A)

Don't know

2A. How many of the low-flow pre-rinse spray valves are currently installed?

2B. Why are some of the low-flow pre-rinse spray valves not currently installed?

3. [If fewer than the number received] Why are you not currently using all of the spray valves you received?

4. Has your organization purchased any equipment to improve energy efficiency in the last three years for which you did not apply for financial assistance through an energy efficiency program?
- Yes, purchased equipment but did not seek financial assistance. (If checked, go to 4A)
 - No equipment was purchased
 - No, financial assistance was sought. (If checked, go to 4B)
 - Don't know
- 4A. Why didn't you apply for a financial assistance for that equipment? (Do not read list)
- Didn't know whether equipment qualified for financial assistance
 - Financial assistance was insufficient
 - Didn't have time to complete paperwork for financial assistance application
 - Too much paperwork for the financial assistance application
 - Didn't know about financial assistance until after equipment was purchased
 - Other (please specify)
 - Don't know
- 4B. For the projects that you completed in the last three years, did you receive all of the financial assistance that you applied for?
- Yes
 - No
 - Don't know
5. Before participating in the Green Nozzle Program, had you installed any low-flow pre-rinse spray valves?
- Yes
 - No
 - Don't know
6. Did you have plans to install the low-flow pre-rinse spray valves prior to participating in the Green Nozzle Program?
- Yes (If checked, go to 6A)
 - No
 - Don't know
- 6A. Would you have gone ahead with this planned installation even if you had not participated in the program?
- Yes
 - No
 - Don't know
- 6B. Did you install more low-flow pre-rinse spray valves than you otherwise would have without the program because it was provided at no-cost or because of the information provided through the program?
- Yes (If checked, go to 6B1)
 - No, program did not affect quantity installed

Don't know

6B1. How many low-flow pre-rinse spray valves would you have installed had you not participated in the program?

6C. Did you install the low-flow pre-rinse spray valves sooner than you would have had you not participated in the program?

- Yes (If checked, go to 6C1)
- No, the program did not affect the timing of the installation
- Don't know

6C1. When would you otherwise have installed the equipment? Would you have installed it in...

- Less than 6 months
- 6 months to less than 1 year
- 1 year to less than 2 years
- 2 years to less than 5 years
- 5 or more years
- Don't know

7. Did you have experience with energy efficiency programs offered by DCEO or the Energy Resources Center prior to participating in the Green Nozzle Program?

- Yes (If checked, go to 7A)
- No
- Don't know

7A. How important was your previous experience with the programs to your decision to install the low-flow pre-rinse spray valves?

- Very important
- Somewhat important
- Only slightly important
- Not at all important
- Don't know

8. Did a representative of the Green Nozzle Program recommend that you install the low-flow pre-rinse spray valves?

- Yes
- No
- Don't know

8A. How likely would you have been to install the low-flow pre-rinse spray valves if they had not been recommended by program staff?

- Definitely would have installed
- Probably would have installed
- Probably would not have installed
- Definitely would not have installed

- Don't know
9. Would you have been financially able to install the low-flow pre-rinse spray valves if it had not been provided at no-cost through the Green Nozzle Program?
- Yes
 No
 Don't know
10. If the Green Nozzle Program had not been available, how likely is it that you would have installed the low-flow pre-rinse spray valves anyway?
- Definitely would have installed
 Probably would have installed
 Probably would not have installed
 Definitely would not have installed
 Don't know
11. Did you receive all of the low-flow pre-rinse spray valves that you were expecting?
- Yes
 No (If checked, go to 11A)
 Don't know
- 11A. Did you contact a program representative about the missing low-flow pre-rinse spray valves?
- Yes (If checked, go to 11B)
 No
 Don't know
- 11B. How was the issue resolved?
12. Were any of the low-flow pre-rinse spray valves broken?
- Yes (If checked, go to 12A)
 No
 Don't know
- 12A. Did you contact a program representative about the broken equipment?
- Yes (If checked, go to 12B)
 No
 Don't know
- 12B. How was the issue resolved?
13. Did the low-flow pre-rinse spray valves meet your expectations? Would you say... (Read list)
- My expectations were exceeded
 My expectations were met
 My expectations were mostly met (If checked, go to 13A)

- My expectations were not met (If checked, go to 13A)
- Don't know

13A. Please explain in what ways the pre-rinse spray valve did not meet your expectations.

14. Overall, how satisfied are you with the Green Nozzle Program?

- Very satisfied
- Satisfied
- Neither satisfied nor dissatisfied
- Dissatisfied
- Very dissatisfied
- Don't know

14A. (If dissatisfied or very dissatisfied checked for any) Please describe in what ways you were not satisfied with the program.

15. Do you have any other comments that you would like to relay to DECO or the Energy Resources Center about energy efficiency in public entities, or about their programs?

Appendix B: Green Nozzle Program Decision Maker Survey Responses

As part of the evaluation work effort, a survey was administered to a sample of participants in the Green Nozzle Program. This survey provided the information used in Chapter 3 to estimate the program net-to-gross ratio, and to perform the program process evaluation.

Each participant was surveyed using the survey instrument provided in Appendix A. The surveys were conducted by telephone. During the survey, a participant was asked questions about (1) his or her general decision making regarding the implementation of energy efficiency improvements, (2) his or her knowledge of and satisfaction with the program, and (3) the influence that the program had on his or her decision to the low-flow pre-rinse spray valves.

The following tabulations summarize program participant survey responses. The first column presents the number of survey respondents (*n*). The second column presents the percentage of survey respondents.

1. According to our records you received [number of nozzles] low-flow pre-rinse spray valve (s) through the program. Is this correct?	<i>Response</i>	(n=22)	<i>Percent of Respondents</i>
	Yes	22	100%
	No	0	0%
	Don't know	0	0%
2. Are all of the low-flow pre-rinse spray valves that you received currently installed?	<i>Response</i>	(n=22)	<i>Percent of Respondents</i>
	Yes	12	55%
	No	10	45%
	Don't know	0	0%
4. Has your organization purchased any equipment to improve energy efficiency in the last three years for which you did not apply for financial assistance through an energy efficiency program?	<i>Response</i>	(n=22)	<i>Percent of Respondents</i>
	Yes, purchased equipment but did not seek financial assistance.	4	18%
	No equipment was purchased	7	32%
	No, financial assistance was sought	9	41%
4A. Why didn't you apply for a financial assistance for that equipment?	<i>Response</i>	(n=4)	<i>Percent of Respondents</i>
	Didn't know whether equipment qualified for financial assistance	1	25%
	Financial assistance was insufficient	0	0%
	Didn't have time to complete paperwork for financial assistance application	1	25%
	Too much paperwork for the financial assistance application	0	0%
	Didn't know about financial assistance until after equipment was purchased	1	25%
	Other (please specify)	1	25%
4B. For the projects that you completed in the last three years, did you receive all of the financial assistance that you applied for?	<i>Response</i>	(n=9)	<i>Percent of Respondents</i>
	Yes	6	67%
	No	3	33%
	Don't know	0	0%
5. Before participating in the Green Nozzle Program, had you installed any low-flow pre-rinse spray valves?	<i>Response</i>	(n=22)	<i>Percent of Respondents</i>
	Yes	2	9%
	No	20	91%
	Don't know	0	0%
6. Did you have plans to install the low-flow pre-rinse spray valves prior to participating in the Green Nozzle Program?	<i>Response</i>	(n=22)	<i>Percent of Respondents</i>
	Yes	1	5%
	No	20	91%
	Don't know	1	5%

6A. Would you have gone ahead with this planned installation even if you had not participated in the program?	<i>Response</i>	<i>(n=1)</i>	<i>Percent of Respondents</i>
	Yes	1	1
	No	0	0
	Don't know	0	0
6B. Did you install more low-flow pre-rinse spray valves than you otherwise would have without the program because it was provided at no-cost or because of the information provided through the program?	<i>Response</i>	<i>(n=1)</i>	<i>Percent of Respondents</i>
	Yes	1	1
	No	0	0
	Don't know	0	0
6C. Did you install the low-flow pre-rinse spray valves sooner than you would have had you not participated in the program?	<i>Response</i>	<i>(n=1)</i>	<i>Percent of Respondents</i>
	Yes	1	1
	No, the program did not affect the timing of the installation	0	0
	Don't know	0	0
6C1. When would you otherwise have installed the equipment? Would you have installed it in...	<i>Response</i>	<i>(n=1)</i>	<i>Percent of Respondents</i>
	Less than 6 months	0	0
	6 months to less than 1 year	1	1
	1 year to less than 2 years	0	0
	2 years to less than 5 years	0	0
	5 or more years	0	0
Don't know	0	0	
7. Did you have experience with energy efficiency programs offered by DCEO or the Energy Resources Center prior to participating in the Green Nozzle Program?	<i>Response</i>	<i>(n=22)</i>	<i>Percent of Respondents</i>
	Yes	10	45%
	No	12	55%
	Don't know	0	0%
7A. How important was your previous experience with the programs to your decision to install the low-flow pre-rinse spray valves?	<i>Response</i>	<i>(n=10)</i>	<i>Percent of Respondents</i>
	Very important	3	30%
	Somewhat important	4	40%
	Only slightly important	2	20%
	Not at all important	1	10%
Don't know	0	0%	
8. Did a representative of the Green Nozzle Program recommend that you install the low-flow pre-rinse spray valves?	<i>Response</i>	<i>(n=22)</i>	<i>Percent of Respondents</i>
	Yes	14	64%
	No	7	32%
	Don't know	1	5%

8A. How likely would you have been to install the low-flow pre-rinse spray valves if they had not been recommended by program staff?	<i>Response</i>	<i>(n=14)</i>	<i>Percent of Respondents</i>
	Definitely would have installed	0	0%
	Probably would have installed	1	7%
	Probably would not have installed	10	71%
	Definitely would not have installed	3	21%
	Don't know	0	0%
9. Would you have been financially able to install the low-flow pre-rinse spray valves if it had not been provided at no-cost through the Green Nozzle Program?	<i>Response</i>	<i>(n=22)</i>	<i>Percent of Respondents</i>
	Yes	7	32%
	No	14	64%
	Don't know	1	5%
10. If the Green Nozzle Program had not been available, how likely is it that you would have installed the low-flow pre-rinse spray valves anyway?	<i>Response</i>	<i>(n=22)</i>	<i>Percent of Respondents</i>
	Definitely would have installed	0	0%
	Probably would have installed	2	9%
	Probably would not have installed	11	50%
	Definitely would not have installed	9	41%
	Don't know	0	0%
11. Did you receive all of the low-flow pre-rinse spray valves that you were expecting?	<i>Response</i>	<i>(n=22)</i>	<i>Percent of Respondents</i>
	Yes	22	100%
	No	0	0%
	Don't know	0	0%
11A. Did you contact a program representative about the missing low-flow pre-rinse spray valves?	<i>Response</i>	<i>(n=0)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No	0	0%
	Don't know	0	0%
12. Were any of the low-flow pre-rinse spray valves broken?	<i>Response</i>	<i>(n=22)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No	22	100%
	Don't know	0	0%
12A. Did you contact a program representative about the broken equipment?	<i>Response</i>	<i>(n=0)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No	0	0%
	Don't know	0	0%

	<i>Response</i>	<i>(n=22)</i>	<i>Percent of Respondents</i>
13. Did the low-flow pre-rinse spray valves meet your expectations? Would you say...	My expectations were exceeded	3	14%
	My expectations were met	8	36%
	My expectations were mostly met	2	9%
	My expectations were not met	5	23%
	Don't know	4	18%

	<i>Response</i>	<i>(n=22)</i>	<i>Percent of Respondents</i>
14. Overall, how satisfied are you with the Green Nozzle Program?	Very satisfied	10	45%
	Satisfied	4	18%
	Neither satisfied nor dissatisfied	5	23%
	Dissatisfied	2	9%
	Very Dissatisfied	1	5%
	Don't know	0	0%

	<i>Response</i>	<i>(n=22)</i>	<i>Percent of Respondents</i>
15. Do you have gas or electric water heating in your facility?	Gas	18	82%
	Electric	2	9%
	Don't know	2	9%

6. Did you have plans to install the low-flow pre-rinse spray valves prior to participating in the Green Nozzle Program?	<i>Response</i>	(n=64)	<i>Percent of Respondents</i>
	Yes	4	6%
	No	57	89%
	Don't know	3	5%
6A. Would you have gone ahead with this planned installation even if you had not participated in the program?	<i>Response</i>	(n=4)	<i>Percent of Respondents</i>
	Yes	2	50%
	No	2	50%
	Don't know	0	0%
6B. Did you install more low-flow pre-rinse spray valves than you otherwise would have without the program because it was provided at no-cost or because of the information provided through the program?	<i>Response</i>	(n=4)	<i>Percent of Respondents</i>
	Yes	3	75%
	No	1	25%
	Don't know	0	0%
6C. Did you install the low-flow pre-rinse spray valves sooner than you would have had you not participated in the program?	<i>Response</i>	(n=4)	<i>Percent of Respondents</i>
	Yes	2	50%
	No, the program did not affect the timing of the installation	2	50%
	Don't know	0	0%
6C1. When would you otherwise have installed the equipment? Would you have installed it in...	<i>Response</i>	(n=2)	<i>Percent of Respondents</i>
	Less than 6 months	0	0%
	6 months to less than 1 year	0	0%
	1 year to less than 2 years	1	50%
	2 years to less than 5 years	0	0%
	5 or more years	0	0%
	Don't know	1	50%
7. Did you have experience with energy efficiency programs offered by DCEO or the Energy Resources Center prior to participating in the Green Nozzle Program?	<i>Response</i>	(n=63)	<i>Percent of Respondents</i>
	Yes	28	44%
	No	34	54%
	Don't know	1	2%
7A. How important was your previous experience with the programs to your decision to install the low-flow pre-rinse spray valves?	<i>Response</i>	(n=28)	<i>Percent of Respondents</i>
	Very important	9	32%
	Somewhat important	11	39%
	Only slightly important	4	14%
	Not at all important	4	14%
	Don't know	0	0%

8. Did a representative of the Green Nozzle Program recommend that you install the low-flow pre-rinse spray valves?	<i>Response</i>	<i>(n=64)</i>	<i>Percent of Respondents</i>
	Yes	24	38%
	No	23	36%
	Don't know	17	27%
8A. How likely would you have been to install the low-flow pre-rinse spray valves if they had not been recommended by program staff?	<i>Response</i>	<i>(n=24)</i>	<i>Percent of Respondents</i>
	Definitely would have installed	0	0%
	Probably would have installed	3	13%
	Probably would not have installed	15	63%
	Definitely would not have installed	6	25%
Don't know	0	0%	
9. Would you have been financially able to install the low-flow pre-rinse spray valves if it had not been provided at no-cost through the Green Nozzle Program?	<i>Response</i>	<i>(n=64)</i>	<i>Percent of Respondents</i>
	Yes	32	50%
	No	21	33%
	Don't know	11	17%
10. If the Green Nozzle Program had not been available, how likely is it that you would have installed the low-flow pre-rinse spray valves anyway?	<i>Response</i>	<i>(n=64)</i>	<i>Percent of Respondents</i>
	Definitely would have installed	1	2%
	Probably would have installed	10	16%
	Probably would not have installed	37	58%
	Definitely would not have installed	15	23%
Don't know	1	2%	
11. Did you receive all of the low-flow pre-rinse spray valves that you were expecting?	<i>Response</i>	<i>(n=64)</i>	<i>Percent of Respondents</i>
	Yes	61	95%
	No	0	0%
	Don't know	3	5%
11A. Did you contact a program representative about the missing low-flow pre-rinse spray valves?	<i>Response</i>	<i>(n=0)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No	0	0%
	Don't know	0	0%
12. Were any of the low-flow pre-rinse spray valves broken?	<i>Response</i>	<i>(n=64)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No	58	91%
	Don't know	6	9%

12A. Did you contact a program representative about the broken equipment?	<i>Response</i>	<i>(n=0)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No	0	0%
	Don't know	0	0%

13. Did the low-flow pre-rinse spray valves meet your expectations? Would you say...	<i>Response</i>	<i>(n=64)</i>	<i>Percent of Respondents</i>
	My expectations were exceeded	7	11%
	My expectations were met	35	55%
	My expectations were mostly met	8	13%
	My expectations were not met	7	11%
Don't know	7	11%	

14. Overall, how satisfied are you with the Green Nozzle Program?	<i>Response</i>	<i>(n=64)</i>	<i>Percent of Respondents</i>
	Very satisfied	26	41%
	Satisfied	21	33%
	Neither satisfied nor dissatisfied	13	20%
	Dissatisfied	1	2%
	Very Dissatisfied	0	0%
Don't know	3	5%	

Appendix C: STEP Program Decision Maker Survey

Hello, may I please speak with [Contact Name]?

My name is ___ and I'm calling, on behalf of the Illinois Department of Commerce & Economic Opportunity (the DCEO). According to our records your [school/park district/school district] participated in the Lights for Learning Direct Install Program through which you received some equipment to help you save energy. [Some participants may know program as Savings Through Efficient Products (STEP)]

This equipment was to be self-installed at [facility name].

We are interested in your experience with the program and any feedback you may have. DCEO plans to use this information to improve the energy efficiency programs. Is now a good time to talk? [If not: Can you suggest a time when I could call you back?]

You are shown as the contact person for your [school/park district/school district]'s participation in the program. Is that correct?

No (*Who is the contact person?*)

Name: _____

Title: _____

Phone Number: _____

Yes (*Continue*)

Many of our questions focus on your [school/park district/school district]'s decision to participate in the program and to install the Direct Install Equipment. Are you the best person to talk to?

No. (*Is there someone else who would be better for us to contact?*)

Who is that?

Name: _____

Title: _____

Phone Number: _____

Thank you very much for your time.

(REPEAT FOR NEW CONTACT PERSON ABOVE. CALL THIS PERSON AND GO TO BEGINNING OF INTRODUCTION)

Yes. "I am the best person to talk to." Continue interview.

1. What was your role in the decision making process to participate in the Lights for Learning Direct Install Program?
 - Main decision maker
 - Assisted with the decision
 - Was not part of the decision process (If checked, go to 2A)

2. Who was the main decision maker? If multiple people were responsible for the decision, please provide the name of the person you think is most knowledgeable about the decision making process to implement the energy efficient equipment.
 - 2A. What is this person's telephone number?

3. What are the sources your [school/park district/school district] relies on for information about energy efficient equipment, materials and design features? (Check all that apply) (Do not read list)
 - A DCEO representative
 - The DCEO website
 - The Midwest Energy Efficiency Alliance (MEEA)
 - A utility representative
 - Brochures or advertisements
 - Friends and colleagues
 - An architect, engineer, or energy consultant
 - Equipment vendors or building contractors
 - Smart Energy Design Assistance Center (SEDAC)
 - Illinois Association of Parks Districts (IAPD)
 - Other (please describe)

4. Which of the following policies or procedures does your [school/park district/school district] have in place regarding energy efficiency improvements? (Check all that apply) (Read list)
 - An energy management plan (If checked, go to 4A)
 - A staff member responsible for energy and energy efficiency
 - Policies that incorporate energy efficiency in operations and procurement
 - Active training of staff
 - Other (please specify)
 - Do not have policies or procedures for energy efficiency improvements
 - Don't know

- 4A. Does your energy management plan include goals for energy savings?

- Yes (If checked, go to 4B)
- No
- Don't know

4B. Could you describe the goals specified in your energy management plan?

5. Has your (school/park district/school district) implemented energy efficiency improvements in the past?

- Yes (go to 5A)
- No
- Don't know

5A. What energy efficiency improvements has your [school/park district/school district] implemented?

5B. When making decisions about energy efficient equipment, how important is your past experience with such equipment?

- Very important
- Somewhat important
- Only slightly important
- Not important at all
- Don't know

6. What barriers does your [school/park district/school district] face in making energy efficiency improvements? (Select all that apply) (Do not read list)

- Insufficient funding for improvements
- Lack of information on energy efficient equipment and practices
- Approval processes that are slow or make purchasing difficult
- Schedules that dictate when equipment is to be replaced or maintained regardless of efficiency levels
- Financial assistance program time requirements
- Current equipment that is too new to be replaced with more efficient equipment
- Other (please specify)
- Don't know

7. How important is financial assistance from DCEO or MEEA for your decision making regarding energy efficiency improvements?
- Very important
 - Somewhat important
 - Only slightly important
 - Not important at all
 - Don't know
8. How important is advice and/or recommendations received from DCEO or MEEA for your decision making regarding energy efficiency improvements?
- Very important
 - Somewhat important
 - Only slightly important
 - Not important at all
 - Don't know
9. Has your [school/park district/school district] purchased any energy efficient equipment in the last three years for which you did not apply for financial assistance through an energy efficiency program?
- Yes, purchased energy efficient equipment but did not seek financial assistance. (If checked, go to 9A)
 - No equipment was purchased
 - No, financial assistance was sought. (If checked, go to 9B)
 - Don't know
- 9A. Why didn't you apply for a financial assistance for that equipment? (Do not read list)
- Didn't know whether equipment qualified for financial assistance
 - Financial assistance was insufficient
 - Didn't have time to complete paperwork for financial assistance application
 - Too much paperwork for the financial assistance application
 - Didn't know about financial assistance until after equipment was purchased
 - Other (please specify)
- 9B. For the projects that you completed in the last three years, did you receive all of the financial assistance that you applied for?
- Yes
 - No
 - Don't know

10. How did you learn of the Lights for Learning Direct Install Program? (Select all that apply)

- Approached directly by a representative of the Lights for Learning Direct Install Program
- Received an informational brochure on the Lights for Learning Direct Install Program
- A DCEO representative mentioned it
- The DCEO website
- A Midwest Energy Efficiency Alliance (MEEA) representative mentioned it
- A Smart Energy Design Assistance Center (SEDAC) representative mentioned it
- A utility representative
- Friends or colleagues
- An architect, engineer, or energy consultant
- Attended a conference, workshop or seminar
- An energy service company
- Past experience with the program
- Equipment vendors or building contractors
- Other (please explain)
- Don't know

11. Before participating in the Lights for Learning Direct Install Program, had you installed any equipment or measure similar to the Direct Install Equipment in the participating facilities?

- Yes
- No
- Don't know

12. Did you have plans to install the Direct Install Equipment before participating in the Lights for Learning Direct Install Program?

- Yes (If checked, go to 12A)
- No
- Don't know

12A. Would you have gone ahead with this planned installation even if you had not participated in the program?

- Yes
- No
- Don't know

12B. For about how long have you had plans to install this equipment prior to finding out about the program? (Do not read. Use as prompts if needed.) () Less than 6 months

- 6 months to less than 1 year
- 1 year to less than 2 years
- 2 years to less than 5 years
- 5 or more years
- Don't know

12C. Did your plans specify the specific equipment and the quantity of equipment or were they more general?

- Yes
- No, it was more of a general plan to make energy efficiency improvements
- Don't know

13. Did you have experience with DCEO or MEEA energy efficiency programs prior to participating in the Lights for Learning Direct Install Program?

- Yes (If checked, go to 13A)
- No
- Don't know

13A. How important was your previous experience with the DCEO or MEEA programs in making your decision to install the Direct Install Equipment?

- Very important
- Somewhat important
- Only slightly important
- Not at all important
- Don't know

14. How likely would you have been to install the Direct Install Equipment had it not been recommended during the facility walk-through?

- Definitely would have installed
- Probably would have installed
- Probably would not have installed
- Definitely would not have installed
- Don't know

15. Would you have been financially able to install the Direct Install Equipment if it had not been provided at no-cost through the Lights for Learning Direct Install Program?

- Yes
- No
- Don't know

16. If the Lights for Learning Direct Install Program had not been available, how likely is it that you would have installed the Direct Install Equipment anyway?

- Definitely would have installed
- Probably would have installed
- Probably would not have installed
- Definitely would not have installed
- Don't know

17. Did you install more equipment than you otherwise would have without the program because it was provided at no-cost or because of the information provided through the program?

- Yes (If checked, go to 17A)
- No, program did not affect quantity installed
- Don't know

17A. What Direct Install Equipment did you install because of the program (ask for quantities of equipment installed)?

18. Did you install the equipment earlier than you otherwise would have because it was provided at no-cost or because of the information provided through the program?

- Yes (If checked, go to 18A)
- No, the program did not affect the timing of the purchase and installation
- Don't know

18A. When would you otherwise have installed the equipment? Would you have installed it in...

- Less than 6 months
- 6 months to less than 1 year
- 1 year to less than 2 years
- 2 years to less than 5 years
- 5 or more years
- Don't know

19. [If installed efficient light bulbs] If you had not installed the [efficient light bulbs] received through the program, would you have installed some other type of light bulbs?

- Yes (if checked, go to 19A)
- No
- Don't know

19A. What would you have installed had you not participated in the program? (Select all that apply)

- Incandescent light bulbs instead of CFL light bulbs
- Incandescent light bulbs instead of LED light bulbs
- CFL light bulbs instead of LED light bulbs
- Other _____
- Don't know

20. [If installed exit signs] If you had not installed the LED exit signs received through the program, would you have installed some other type of exit signs?

- Yes (if checked, go to 20A)
- No
- Don't know

20A. What would you have installed had you not participated in the program? (Select all that apply)

- Incandescent Exit Signs instead of LED Exit Signs
- Fluorescent Exit Signs instead of LED Exit Signs
- Other _____
- Don't know

21. Did you receive all of the Direct Install Equipment that you were expecting?

- Yes
- No (If checked, go to 21A)
- Don't know

21A. What equipment did you not receive?

22. Did you contact a program representative about the missing equipment?

- Yes (If checked, go to 22A.)
- No
- Don't know

22A. How was the issue resolved?

23. Was any of the energy efficient equipment that you received broken?

- Yes (If checked, go to 23A)
- No
- Don't know

23A. What equipment was broken?

24. Did you contact a program representative about the broken equipment?

- Yes (If checked, go to 24A)
- No
- Don't know

24A. How was the issue resolved?

25. Did the installation of the equipment go smoothly?

- Yes
- For the most part (If checked, go to 25A)
- No (If checked, go to 25A)
- Don't know

25A. What did not go smoothly with the equipment installation?

26. Did the equipment meet your expectations? Would you say... (Read list)

- My expectations were exceeded
- My expectations were met
- My expectations were mostly met (If checked, go to 26A)
- My expectations were not met (If checked, go to 26A)
- Don't know

26A. Please explain in what ways the energy efficiency measure did not meet your expectations.

27. Did a program representative verify the equipment installation or did you complete a self-verification?

- A program representative verified the equipment installation
- A self-verification was completed (If checked, go to 27A)
- Don't know

27A. Did the self-verification go smoothly?

- Yes
- For the most part (If checked, go to 28B)
- No (If checked, go to 28B)
- Don't know

27B. What about the self-verification did not go smoothly?

28. Did you **not** install any of the Direct Install Equipment that you were sent?

- Yes (If checked, go to 28A)
- No
- Don't know

28A. What equipment did you **not** install?

28B. Why did you **not** install this equipment?

29. Did you review the Final Report that was sent to you after the walk through was completed?

- Yes (If checked, go to 29A)
- No
- Do not recall receiving a report
- Don't know

29A. How useful was the information provided in the report?

- Very useful
- Somewhat useful
- Not at all useful
- Don't know

29B. Please explain how the report was or was not useful.

29C. Do you recall reading the section on financial incentives available for making energy efficiency improvements?

- Yes (If checked, go to 30C1)
- No
- Don't know

29C1. Were you aware of these incentive programs before you received the report?

- Yes
- No
- Don't know

29C2. Since receiving the report, have you started any projects or are you considering any projects to take advantage of the incentives available?

- Yes (If checked, go to 30C2.1)
- No
- Don't know

29C2.1. What projects have you started or are you considering?

30. Since participating in the Lights for Learning Direct Install Program, have you implemented any additional energy efficient equipment without the assistance of an energy efficiency program?

- Yes (If checked, go to 30A)
- No
- Don't know

30A. What equipment did you install?

30B. Did a program staff member recommend this equipment?

- Yes (If checked, go to 30B1)
- No
- Don't know

30B1. How important was this recommendation to your decision to implement the additional energy efficiency measures?

- Very important
- Somewhat important
- Neither important or unimportant
- Somewhat unimportant
- Unimportant
- Don't know

30C. How important was your experience with the program to your decision to implement the additional energy efficiency measures?

- Very important
- Somewhat important
- Neither important or unimportant
- Somewhat unimportant
- Unimportant
- Don't know

30D. How important was your participation in any past programs offered by DCEO or MEEA to your decision to implement the additional energy efficiency measures.

- Very important
- Somewhat important
- Neither important or unimportant
- Somewhat unimportant
- Unimportant
- Don't know

30E. Why didn't you apply for or receive any financial assistance for those items?

- Small project that wasn't worth applying for financial assistance
- Didn't know whether equipment qualified for financial assistance
- Too much paperwork for the financial assistance application
- Financial assistance was insufficient
- Didn't have time to complete paperwork for financial assistance application
- Didn't know about financial assistance until after equipment was purchased
- For some other reason (please describe): _____
- Don't know

31. Given your experience with the Lights for Learning Direct Install Program, would you buy energy efficient equipment in the future?

- Yes (if checked, go to 31A)
- No
- Don't know

31A. How likely would you be to buy energy efficient equipment in the future if financial assistance was not offered through an energy efficiency program?

- Very likely
- Somewhat likely
- Neutral
- Somewhat unlikely
- Very unlikely
- Don't know

32. How would you rate your satisfaction with the following - *Very Satisfied, Somewhat Satisfied, Neither Satisfied nor Dissatisfied, Somewhat Dissatisfied, or Very Dissatisfied?*

	Very Satisfied	Satisfied	Neither Satisfied Nor Dissatisfied	Dissatisfied	Very Dissatisfied	Not Applicable/ Don't Know
Information provided by the DCEO	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information provided by the Midwest Energy Efficiency Alliance (MEEA)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The effort required for the application process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The walk through energy audit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance of the equipment installed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The self-verification process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall program experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32A. (If dissatisfied or very dissatisfied checked for any) Please describe in what ways you were not satisfied with the program.

33. Do you have any other comments that you would like to relay to DECO or MEEA about energy efficiency in public entities, or about their programs?

34. Would you like to be contacted for future programs that may be able to help you save energy?

Yes

No

Appendix D: STEP Program Participant Survey Results

As part of the evaluation work effort, a survey was administered to a sample of participants in the STEP Program. This survey provided the information used in Chapter 3 to estimate the program net-to-gross ratio, and to perform the program process evaluation.

Each participant was surveyed using the survey instrument provided in Appendix A. The surveys were conducted by telephone or internet. During the survey, a participant was asked questions about (1) his or her general decision making regarding the implementation of energy efficiency improvements, (2) his or her knowledge of and satisfaction with the program, and (3) the influence that the program had on his or her decision to implement the measures distributed through the STEP Program.

The following tabulations summarize program participant survey responses. The first column presents the number of survey respondents (n). The second column presents the percentage of survey respondents.

	<i>Response</i>	<i>(n=24)</i>	<i>Percent of Respondents</i>
1. What was your role in the decision making process to participate in the STEP Program?	Main decision maker	15	63%
	Assisted with the decision	5	21%
	Was not part of the decision process	4	17%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents*</i>
3. What are the sources your [school/park district/school district] relies on for information about energy efficient equipment, materials and design features?	A DCEO representative	7	35%
	The DCEO website	11	55%
	The Midwest Energy Efficiency Alliance (MEEA)	10	50%
	A utility representative	4	20%
	Brochures or advertisements	7	35%
	Friends and colleagues	5	25%
	An architect, engineer, or energy consultant	8	40%
	Equipment vendors or building contractors	10	50%
	Smart Energy Design Assistance Center (SEDAC)	11	55%
	Illinois Association of Parks Districts (IAPD)	4	20%
	Other	3	15%

*Since respondents were able to select more than one response, the sum of the percentages in the table above can exceed 100%.

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents*</i>
4. Which of the following policies or procedures does your [school/park district/school district] have in place regarding energy efficiency improvements?	An energy management plan	6	30%
	A staff member responsible for energy and energy efficiency	8	40%
	Policies that incorporate energy efficiency in operations and procurement	8	40%
	Active training of staff	6	30%
	Other	0	0%
	Do not have policies or procedures for energy efficiency improvements	7	35%
	Don't know	1	5%

*Since respondents were able to select more than one response, the sum of the percentages in the table above can exceed 100%.

	<i>Response</i>	<i>(n=6)</i>	<i>Percent of Respondents</i>
4a. Does your energy management plan include goals for energy savings?	Yes	6	100%
	No	0	0%
	Don't know	0	0%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
5. Has your [school/park district/school district] implemented energy efficiency improvements in the past?	Yes	15	75%
	No	4	20%
	Don't know	1	5%

	<i>Response</i>	<i>(n=15)</i>	<i>Percent of Respondents</i>
5b. When making decisions about energy efficient equipment, how important is your past experience with such equipment?	Very important	10	67%
	Somewhat important	4	27%
	Only slightly important	1	7%
	Not important at all	0	0%
	Don't know	0	0%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents*</i>
6. What barriers does your [school/park district/school district] face in making energy efficiency improvements?	Insufficient funding for improvements	16	80%
	Lack of information on energy efficient equipment and practices	3	15%
	Approval processes that are slow or make purchasing difficult	1	5%
	Schedules that dictate when equipment is to be replaced or maintained regardless of efficiency levels	3	15%
	Financial assistance program time requirements	2	10%
	Current equipment that is too new to be replaced with more efficient equipment	4	20%
	Other	1	5%
	Don't know	2	10%

*Since respondents were able to select more than one response, the sum of the percentages in the table above can exceed 100%.

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
7. How important is financial assistance from DCEO or MEEA for your decision making regarding energy efficiency improvements?	Very important	15	75%
	Somewhat important	4	20%
	Only slightly important	1	5%
	Not important at all	0	0%
	Don't know	0	0%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
8. How important is advice and/or recommendations received from DCEO or MEEA for your decision making regarding energy efficiency improvements?	Very important	10	50%
	Somewhat important	9	45%
	Only slightly important	1	5%
	Not important at all	0	0%
	Don't know	0	0%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
9. Has your [school/park district/school district] purchased any energy efficient equipment in the last three years for which you did not apply for financial assistance through an energy efficiency program?	Yes, purchased energy efficient equipment but did not seek financial assistance.	10	50%
	No equipment was purchased	4	20%
	No financial assistance was sought	3	15%
	Don't know	3	15%

	<i>Response</i>	<i>(n=10)</i>	<i>Percent of Respondents</i>
9a. Why didn't you apply for a financial assistance for that equipment?	Didn't know whether equipment qualified for financial assistance	2	20%
	Financial assistance was insufficient	0	0%
	Didn't have time to complete paperwork for financial assistance application	2	20%
	Too much paperwork for the financial assistance application	0	0%
	Didn't know about financial assistance until after equipment was purchased	2	20%
	Other	4	40%

	<i>Response</i>	<i>(n=3)</i>	<i>Percent of Respondents</i>
9b. For the projects that you completed in the last three years, did you receive all of the financial assistance that you applied for?	Yes	2	67%
	No	1	33%
	Don't know	0	0%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents*</i>
10. How did you learn of the STEP Program?	Approached directly by a representative of the STEP Program	5	25%
	Received an informational brochure on the STEP Program	7	35%
	A DCEO representative mentioned it	5	25%
	The DCEO website	6	30%
	A Midwest Energy Efficiency Alliance (MEEA) representative mentioned it	4	20%
	A Smart Energy Design Assistance Center (SEDAC) representative mentioned it	7	35%
	A utility representative	1	5%
	Friends or colleagues	3	15%
	An architect, engineer, or energy consultant	2	10%
	Attended a conference, workshop or seminar	7	35%
	An energy service company	2	10%
	Past experience with the program	1	5%
	Equipment vendors or building contractors	1	5%
	Other	2	10%
	Don't know	0	0%

*Since respondents were able to select more than one response, the sum of the percentages in the table above can exceed 100%.

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
11. Before participating in the STEP Program, had you installed any equipment or measure similar to the Direct Install Equipment in the participating facilities?	Yes	6	30%
	No	10	50%
	Don't know	4	20%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
12. Did you have plans to install the Direct Install Equipment before participating in the STEP Program?	Yes	5	25%
	No	12	60%
	Don't know	3	15%

12a. Would you have gone ahead with this planned installation even if you had not participated in the program?	<i>Response</i>	<i>(n=5)</i>	<i>Percent of Respondents</i>
	Yes	3	60%
	No	1	20%
	Don't know	1	20%
12b. For about how long have you had plans to install this equipment prior to finding out about the program?	<i>Response</i>	<i>(n=5)</i>	<i>Percent of Respondents</i>
	Less than 6 months	2	40%
	6 months to less than 1 year	1	20%
	1 year to less than 2 years	2	40%
	2 years to less than 5 years	0	0%
	5 or more years	0	0%
Don't know	0	0%	
12c. Did your plans specify the specific equipment and the quantity of equipment or were they more general?	<i>Response</i>	<i>(n=5)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No, it was more of a general plan to make energy efficiency improvements	5	100%
	Don't know	0	0%
13. Did you have experience with DCEO or MEEA energy efficiency programs prior to participating in the Lights for Learning Direct Install Program?	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
	Yes	11	55%
	No	8	40%
	Don't know	1	5%
13a. How important was your previous experience with the DCEO or MEEA programs in making your decision to install the Direct Install Equipment?	<i>Response</i>	<i>(n=11)</i>	<i>Percent of Respondents</i>
	Very important	4	36%
	Somewhat important	3	27%
	Only slightly important	3	27%
	Not at all important	1	9%
Don't know	0	0%	
14. How likely would you have been to install the Direct Install Equipment had it not been recommended during the facility walk-through?	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
	Definitely would have installed	2	10%
	Probably would have installed	8	40%
	Probably would not have installed	7	35%
	Definitely would not have installed	2	10%
Don't know	1	5%	
15. Would you have been financially able to install the Direct Install Equipment if it had not been provided at no-cost through the Lights for STEP Program?	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
	Yes	6	30%
	No	9	45%
	Don't know	5	25%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
16. If the STEP Program had not been available, how likely is it that you would have installed the Direct Install Equipment anyway?	Definitely would have installed	0	0%
	Probably would have installed	6	30%
	Probably would not have installed	11	55%
	Definitely would not have installed	2	10%
	Don't know	1	5%

	<i>Response</i>	<i>(n=19)</i>	<i>Percent of Respondents</i>
17. Did you install more equipment than you otherwise would have without the program because it was provided at no-cost or because of the information provided through the program?	Yes	9	47%
	No, program did not affect quantity installed	5	26%
	Don't know	5	26%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
18. Did you install the equipment earlier than you otherwise would have because it was provided at no-cost or because of the information provided through the program?	Yes	12	60%
	No, the program did not affect the timing of the purchase and installation	5	25%
	Don't know	3	15%

	<i>Response</i>	<i>(n=12)</i>	<i>Percent of Respondents</i>
18a. When would you otherwise have installed the equipment? Would you have installed it in...	Less than 6 months	0	0%
	6 months to less than 1 year	1	8%
	1 year to less than 2 years	2	17%
	2 years to less than 5 years	3	25%
	5 or more years	2	17%
	Don't know	4	33%

	<i>Response</i>	<i>(n=15)</i>	<i>Percent of Respondents</i>
19. If you had not installed the efficient light bulbs received through the program, would you have installed some other type of light bulbs?	Yes	5	33%
	No	6	40%
	Don't know	4	27%

	<i>Response</i>	<i>(n=5)</i>	<i>Percent of Respondents*</i>
19a. What would you have installed had you not participated in the program?	Incandescent light bulbs instead of CFL light bulbs	0	0%
	Incandescent light bulbs instead of LED light bulbs	1	20%
	CFL light bulbs instead of LED light bulbs	1	20%
	Other	2	40%
	Don't know	1	20%

*Since respondents were able to select more than one response, the sum of the percentages in the table above can exceed 100%.

20. [If installed exit signs] If you had not installed the LED exit signs received through the program, would you have installed some other type of exit signs?	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
	Yes	2	10%
	No	7	35%
	Did not receive efficient light bulbs from the program	9	45%
	Don't know	2	10%

20a. What would you have installed had you not participated in the program?	<i>Response</i>	<i>(n=2)</i>	<i>Percent of Respondents*</i>
	Incandescent Exit Signs instead of LED Exit Signs	0	0%
	Fluorescent Exit Signs instead of LED Exit Signs	1	50%
	Other	0	0%
	Don't know	1	50%

*Since respondents were able to select more than one response, the sum of the percentages in the table above can exceed 100%.

21. Did you receive all of the Direct Install Equipment that you were expecting?	<i>Response</i>	<i>(n=19)</i>	<i>Percent of Respondents</i>
	Yes	17	89%
	No	0	0%
	Don't know	2	11%

22. Did you contact a program representative about the missing equipment?	<i>Response</i>	<i>(n=0)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No	0	0%
	Don't know	0	0%

23. Was any of the energy efficient equipment that you received broken?	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No	20	100%
	Don't know	0	0%

24. Did you contact a program representative about the broken equipment?	<i>Response</i>	<i>(n=0)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No	0	0%
	Don't know	0	0%

25. Did the installation of the equipment go smoothly?	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
	Yes	12	60%
	For the most part	8	40%
	No	0	0%
	Don't know	0	0%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
26. Did the equipment meet your expectations? Would you say...	My expectations were exceeded	3	15%
	My expectations were met	15	75%
	My expectations were mostly met	2	10%
	My expectations were not met	0	0%
	Don't know	0	0%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
27. Did a program representative verify the equipment installation or did you complete a self-verification?	A program representative verified the equipment installation	4	20%
	A self-verification was completed	13	65%
	Don't know	3	15%

	<i>Response</i>	<i>(n=12)</i>	<i>Percent of Respondents</i>
27a. Did the self-verification go smoothly?	Yes	11	92%
	For the most part	1	8%
	No	0	0%
	Don't know	0	0%

	<i>Response</i>	<i>(n=18)</i>	<i>Percent of Respondents</i>
27b. Did you not install any of the Direct Install Equipment that you were sent?	Yes	6	33%
	No	9	50%
	Don't know	3	17%

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
29. Did you review the Final Report that was sent to you after the walk through was completed?	Yes	7	35%
	No	1	5%
	Do not recall receiving a report	10	50%
	Don't know	2	10%

	<i>Response</i>	<i>(n=7)</i>	<i>Percent of Respondents</i>
29a. How useful was the information provided in the report?	Very useful	3	43%
	Somewhat useful	3	43%
	Not at all useful	0	0%
	Don't know	1	14%

	<i>Response</i>	<i>(n=7)</i>	<i>Percent of Respondents</i>
29c. Do you recall reading the section on financial incentives available for making energy efficiency improvements?	Yes	6	86%
	No	0	0%
	Don't know	1	14%

29c1. Were you aware of these incentive programs before you received the report?	<i>Response</i>	<i>(n=6)</i>	<i>Percent of Respondents</i>
	Yes	2	33%
	No	3	50%
	Don't know	1	17%

29c2. Since receiving the report, have you started any projects or are you considering any projects to take advantage of the incentives available?	<i>Response</i>	<i>(n=7)</i>	<i>Percent of Respondents</i>
	Yes	4	57%
	No	2	29%
	Don't know	1	14%

30. Since participating in the Lights for STEP Program, have you implemented any additional energy efficient equipment without the assistance of an energy efficiency program?	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
	Yes	7	35%
	No	10	50%
	Don't know	3	15%

30b. Did a program staff member recommend this equipment?	<i>Response</i>	<i>(n=7)</i>	<i>Percent of Respondents</i>
	Yes	0	0%
	No	7	100%
	Don't know	0	0%

30b1. How important was this recommendation to your decision to implement the additional energy efficiency measures?	<i>Response</i>	<i>(n=0)</i>	<i>Percent of Respondents</i>
	Very important	0	0%
	Somewhat important	0	0%
	Neither important or unimportant	0	0%
	Somewhat unimportant	0	0%
	Unimportant	0	0%
	Don't know	0	0%

30c. How important was your experience with the program to your decision to implement the additional energy efficiency measures?	<i>Response</i>	<i>(n=7)</i>	<i>Percent of Respondents</i>
	Very important	0	0%
	Somewhat important	3	43%
	Neither important or unimportant	2	29%
	Somewhat unimportant	0	0%
	Unimportant	2	29%
	Don't know	0	0%

30d. How important was your participation in any past programs offered by DCEO or MEEA to your decision to implement the additional energy efficiency measures?	<i>Response</i>	<i>(n=7)</i>	<i>Percent of Respondents</i>
	Very important	2	29%
	Somewhat important	3	43%
	Neither important or unimportant	1	14%
	Somewhat unimportant	1	14%
	Unimportant	0	0%
	Don't know	0	0%

30e. Why didn't you apply for or receive any financial assistance for those items?	<i>Response</i>	<i>(n=5)</i>	<i>Percent of Respondents</i>
	Small project that wasn't worth applying for financial assistance	2	40%
	Didn't know whether equipment qualified for financial assistance	0	0%
	Too much paperwork for the financial assistance application	1	20%
	Financial assistance was insufficient	0	0%
	Didn't have time to complete paperwork for financial assistance application	0	0%
	Didn't know about financial assistance until after equipment was purchased	0	0%
	For some other reason	2	40%
Don't know	0	0%	

31. Given your experience with the STEP Program, would you buy energy efficient equipment in the future?	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
	Yes	17	85%
	No	0	0%
	Don't know	3	15%

31a. How likely would you be to buy energy efficient equipment in the future if financial assistance was not offered through an energy efficiency program?	<i>Response</i>	<i>(n=17)</i>	<i>Percent of Respondents</i>
	Very likely	4	24%
	Somewhat likely	7	41%
	Neutral	4	24%
	Somewhat unlikely	2	12%
	Very unlikely	0	0%
Don't know	0	0%	

32a. How would you rate your satisfaction with the following: Information provided by the DCEO?	<i>Response</i>	<i>(n=19)</i>	<i>Percent of Respondents</i>
	Very Satisfied	12	63%
	Satisfied	4	21%
	Neither Satisfied nor Dissatisfied	2	11%
	Dissatisfied	0	0%
	Very Dissatisfied	0	0%
	Not Applicable/ Don't Know	1	5%
Average		4.6	

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
32b. How would you rate your satisfaction with the following: Information provided by the Midwest Energy Efficiency Alliance (MEEA)?	Very Satisfied	9	45%
	Satisfied	8	40%
	Neither Satisfied nor Dissatisfied	2	10%
	Dissatisfied	0	0%
	Very Dissatisfied	0	0%
	Not Applicable/ Don't Know	1	5%
	Average		4.4

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
32c. How would you rate your satisfaction with the following: The effort required for the application process?	Very Satisfied	9	45%
	Satisfied	7	35%
	Neither Satisfied nor Dissatisfied	4	20%
	Dissatisfied	0	0%
	Very Dissatisfied	0	0%
	Not Applicable/ Don't Know	0	0%
	Average		4.3

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
32d. How would you rate your satisfaction with the following: The walk through energy audit?	Very Satisfied	7	35%
	Satisfied	6	30%
	Neither Satisfied nor Dissatisfied	5	25%
	Dissatisfied	0	0%
	Very Dissatisfied	0	0%
	Not Applicable/ Don't Know	2	10%
	Average		4.1

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
32e. How would you rate your satisfaction with the following: Performance of the equipment installed?	Very Satisfied	10	50%
	Satisfied	8	40%
	Neither Satisfied nor Dissatisfied	2	10%
	Dissatisfied	0	0%
	Very Dissatisfied	0	0%
	Not Applicable/ Don't Know	0	0%
	Average		4.4

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
32f. How would you rate your satisfaction with the following: The self-verification process?	Very Satisfied	8	40%
	Satisfied	6	30%
	Neither Satisfied nor Dissatisfied	3	15%
	Dissatisfied	0	0%
	Very Dissatisfied	0	0%
	Not Applicable/ Don't Know	3	15%
	Average		4.3

	<i>Response</i>	<i>(n=20)</i>	<i>Percent of Respondents</i>
32g. How would you rate your satisfaction with the following: Overall program experience?	Very Satisfied	9	45%
	Satisfied	11	55%
	Neither Satisfied nor Dissatisfied	0	0%
	Dissatisfied	0	0%
	Very Dissatisfied	0	0%
	Not Applicable/ Don't Know	0	0%
	Average		