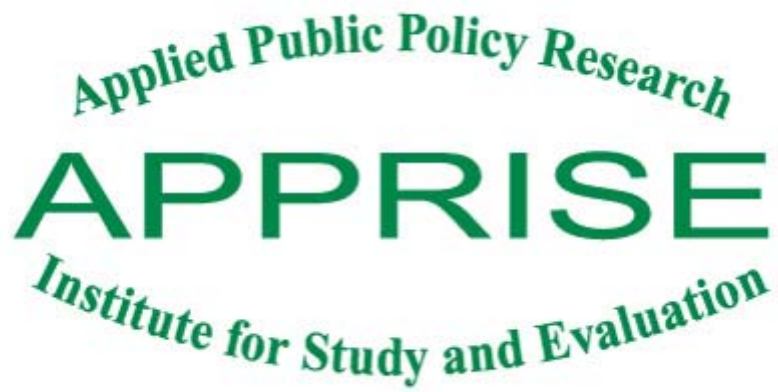




CO First Response Program

Client Survey

Final Report

December 2007

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Executive Summary

Colorado's Governor's Energy Office (GEO) implemented new energy efficiency initiatives in 2006 to improve the energy efficiency of low-income homes. The initiatives include the First Response Program to provide low-cost, cost-effective energy efficiency measures and education to Low-Income Energy Assistance Program (LEAP) eligible households. APPRISE was hired by GEO in April 2007 to conduct an evaluation of the initial implementation of the First Response Program. APPRISE's July 2007 Process Evaluation report provided information on the program design and implementation based on document review, GEO and provider interviews, and on-site observation and inspection of direct install service delivery. This report provides additional information on the effectiveness of program implementation, based on a survey with clients who received program services.

Survey Objectives

The objectives of the survey were to assess program effectiveness overall and to compare the effectiveness of the program for the three delivery methods utilized: direct install, workshop, and mass mailing. The survey addressed the following topics:

- Household energy costs and health issues
- Recall and retention of energy efficiency measures received or installed
- Energy saving actions
- Potential for additional education savings
- Satisfaction with efficiency measures and services

Measure Installation and Retention

The survey asked respondents to report on the number of CFLs and efficient showerheads that the provider installed or that the client received in the energy kit, and the number that were still in use at the time of the survey, between two and eight months after service delivery. Key findings on measure recollection, installation, and retention are summarized below.

- **Respondent reports on the number of light bulbs received in their energy kits:** Survey responses for the number of CFLs provided in the energy kits roughly correspond to the number actually provided. The average number of bulbs that workshop recipients reported was two, corresponding to the two bulbs provided in their kits, and the average number of bulbs that mass mailing clients reported was four, corresponding to the four bulbs that they received in their kits.

Table ES-1
CFLs in Energy Kits

Mean Number of CFLs in Energy Kit		
	Delivery Method	
	Workshop	Mass Mailing
Provider Reports	2	4
Survey Response	2	4

- **Respondent reports on the number of light bulbs installed by providers:** Provider reports for the direct install clients showed that Southwestern Conservation installed the greatest number of CFLs, a mean of 15.2, and CO Range Riders installed the fewest, a mean of 9.1. Overall, survey responses for the number of CFLs installed by providers are slightly lower than the provider reports, but Southwestern Conservation clients reported the greatest number of CFLs, a mean of 11, and Colorado Range Riders the fewest, a mean of 9.

Table ES-2
CFLs Installed by Providers

Mean Number of CFLs Installed						
	Direct Install Provider					
	All Providers	MHYC	CYYCL	SWCC	WCCC	CRR
Provider Reports	13	14	12	15	13	9
Survey Response	10	10	10	11	10	9

- **Respondent reports on provider showerhead installation:** Differences in respondent reports on showerhead installation by provider were also consistent with provider reports. MHYC reports showed an average of .8 showerheads installed per client, compared with an average of .74 reported by respondents and CRR reports showed an average of .5 showerheads installed per client, compared with an average of .45 reported by CRR respondents.

Table ES-3
Showerheads Installed by Providers

Mean Number of Showerheads Installed						
	Direct Install Provider					
	All Providers	MHYC	CYYCL	SWCC	WCCC	CRR
Provider Reports	.7	.8	.7	.7	.8	.5
Survey Response	.66	.74	.60	.58	.70	.45

Comparison of Delivery Methods

The initial program design for the First Response program planned for a comparison of the cost-effectiveness of the three different delivery methods – direct install, workshop, and mass mailing. While the billing analysis impact results will provide the final answer on how the different methods compare, the survey results provide some preliminary information on the effectiveness of the three methods. Key findings from the survey were:

1. Direct install respondents had greater frequency of measure installation, retention and use.
 2. Workshop respondents were most likely to recall receipt of thermometers and report that they changed their hot water and refrigerator/freezer settings after receipt of program services.
 3. Workshop respondents were most likely to report that they made other changes in energy use after receipt of program services.
 4. Direct install and workshop respondents were more likely than mass mailing respondents to report that their energy bills were lower after receipt of program services.
- **Installation and retention of CFLs:** According to program design, direct install program participants received a greater number of CFLs than workshop and mass mailing recipients. Direct install recipients recalled an average of 10 CFLs installed, compared to an average of 4 CFLs for workshop and mass mailing recipients. The survey provided some evidence that the bulbs installed by the direct install providers were more likely to be placed in high use locations. While direct install respondents reported that an average of four of the CFLs provided are used more than four hours per day, workshop and mass mailing respondents reported that only an average of one of the installed CFLs was used more than four hours per day.

Table ES-4
Comparison of Delivery Methods
CFL Installation, Retention, and Use

	Delivery Method		
	Direct Install	Workshop	Mass Mailing
# of CFLs Received	10	4	4
# of CFLs Installed	10	3	3
# of CFLs In Use	9	3	3
# of CFLs used > 30 minutes/day	5	2	2
# of CFLs used > 4 hours/day	4	1	1

- **Installation and retention of efficient showerheads:** While 58 percent of direct install respondents reported that they had an efficient showerhead installed, 46 percent of workshop respondents and 36 percent of mass mailing respondents reported that they installed an efficient showerhead. The majority of all of these respondents reported that the device was still installed at the time of the survey.

Table ES-5
Comparison of Delivery Methods
Showerhead Installation and Retention

	Delivery Method		
	Direct Install	Workshop	Mass Mailing
% with Showerhead Installed	58%	46%	36%
% with Showerhead Still in Use	55%	44%	31%

- **Receipt and use of water temperature thermometers:** Workshop recipients were most likely to recall receipt of the thermometer, report that they used it, and report that they changed their water temperature setting. While 78 percent of workshop recipients reported that they received the thermometer and 42 percent reported that they changed their water temperature, only 18 percent of direct install recipients reported that the provider changed and they retained the water temperature setting, and 26 percent of mass mailing recipients reported that they changed their water temperature setting.

Table ES-6
Comparison of Delivery Methods
Recall and Use of Water Temperature Thermometer

	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Recalled Receipt of Water Temperature Thermometer	42%	78%	54%
Understand How to Use Thermometer	39%	67%	41%
Used Thermometer	20%	48%	22%
Changed Water Temperature Setting	18%	42%	26%

- **Receipt and use of refrigerator/freezer thermometers:** Workshop recipients were also most likely to recall receipt of the refrigerator/freezer thermometer, report that they used it, and report that they changed their refrigerator or freezer setting. This might be related to the fact that workshop recipients were provided with digital thermometers, while the rest of the respondents were provided with temperature cards (except RAP mass mailing clients, who also received the digital thermometer.) While 72 percent of workshop recipients reported that they received the thermometer and 43 percent reported that they changed their refrigerator or freezer or setting, 20 percent of direct install recipients reported that the provider changed and they retained the temperature change, and 28 percent of mass mailing recipients reported that they changed their refrigerator or freezer setting.¹

¹ Niagara direct mail clients are not included in these figures, as they did not receive the refrigerator/freezer thermometer in their kits.

Table ES-7
Comparison of Delivery Methods
Recall and Use of Refrigerator Thermometer

	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Recalled Receipt of Refrigerator Thermometer	48%	72%	67%
Understand How to Use Thermometer	44%	65%	61%
Used Thermometer	28%	50%	46%
Changed Refrigerator/Freezer Temperature	20%	43%	28%

- **Change in other energy use behaviors:** Workshop recipients were also most likely to report that they made other changes in energy use behavior as a result of the program. While 57 percent of workshop recipients reported that they made changes, only 26 percent of direct install recipients and 25 percent of mass mailing recipients reported that they changed their energy use behavior.

Workshop recipients were more likely to provide unprompted changes in energy use behavior such as decreasing use of appliances, using less water, changing their air conditioner settings, turning of the computer when not in use, and using cold water for washing. They were also more likely to respond affirmatively to several questions about other changes that were made in energy use behavior after receipt of program services, as shown in the table below. For example, 27 percent of workshop respondents said that they began setting their heat at or below 68 during the day and 60 at night after receipt of program services, compared to 9 percent of direct install respondents and 13 percent of mass mailing respondents.

Table ES-8
Comparison of Delivery Methods
Change in Other Energy Use Behaviors
After Receipt of Program Services

Changes Made After Service Delivery	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Other Changes to Reduce Energy Usage	26%	57%	25%
Reduced Use of Heat	9%	27%	13%
Reduced Use of Air Conditioning	3%	7%	10%
Got Rid of Extra Refrigerators/Freezers	5%	9%	4%
Turn Off Computers When Not in Use	7%	11%	8%
Turn Off Lights Not in Use	6%	21%	13%
Use Cold Water for Clothes Washing	9%	19%	10%

- **Overall program ratings:** Workshop recipients were most likely to report that the program was very helpful in teaching them about energy use and ways to reduce energy cost. While 81 percent of workshop respondents reported that the program was very helpful, 64 percent of direct install respondents and 53 percent of mass mailing respondents reported that the program was very helpful.

Direct install and workshop recipients were more likely than mass mailing recipients to report that their energy bills are lower after receipt of program services.

Table ES-9
Comparison of Delivery Methods
Overall Program Ratings

	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Program was Very Helpful	64%	81%	53%
Energy Bills are Lower	53%	51%	39%

Direct Install Provider Performance

Five different youth corps provide direct install service delivery. While the billing analysis impact results will show whether there are differences in the effectiveness of the different youth corps, the survey results provide some preliminary information on the relative effectiveness of the providers. Survey findings suggest that MHYC was the most effective provider and WCCC needs to work on their client communication. However, there were some differences between the clients that were served by the different providers, so it is possible that the differences in outcomes relate to differences in the clients rather than to the quality of services delivered.

Key findings from the survey were:

1. While there were some large differences in the average number of CFLs installed by different direct install providers, as shown in provider reports, survey results show smaller differences between providers in the number of CFLs recalled by participants, and in the number of CFLs that are used more than 30 minutes and more than 4 hours each day.
2. MHYC provider and respondent reports were most likely to show that the showerhead was replaced and still in use and CRR provider and respondent reports were least likely to show that the showerhead was replaced and still in use.
3. MHYC respondents were most likely to report that the provider changed their hot water temperature and WCCC respondents were least likely to report that the provider changed their hot water temperature.
4. CRR respondents were most likely to recall receipt of the hot water thermometer and report that they had used it and WCCC respondents were least likely to recall receipt of the hot water thermometer and report that they had used it.

5. MHYC respondents were most likely to report that the provider changed their refrigerator or freezer temperature and WCCC respondents were least likely to report that the provider changed their refrigerator or freezer temperature.
 6. CRR and SWCC respondents were most likely to recall receipt of the refrigerator/freezer thermometer and report that they had used it and WCCC respondents were least likely to recall receipt of the refrigerator/freezer thermometer and report that they had used it.
 7. SWCC, CYYCL, and MHYC respondents were most likely to report that they made other changes in energy use behavior after receiving service delivery and WCCC and CRR respondents were least likely to report that they made other changes.
 8. MHYC respondents were most likely to report that the program was very helpful in teaching about energy use and ways to reduce energy costs and to report that their energy bills are lower, and WCCC respondents were least likely to report this.
- **Installation and retention of CFLs:** Provider reports showed large differences in the number of CFLs installed. While SWCC installed an average of 15 CFLs per home, CRR installed an average of 9 CFLs. The range of respondent recall of CFLs installed was not as large, varying only from 12 for SWCC to 9 for CRR. The range for the number of CFLs used for more than 30 minutes each day was only five to six CFLs. Impact results will show whether differences in savings by youth corps are related to the number installed or whether there are small differences in savings that relate to respondent reports on the number used greater than a certain number of hours each day.

Table ES-10
Comparison of Direct Install Providers
CFL Installation, Retention, and Use

	Direct Install Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Provider Reports - # CFLs Installed	14	12	15	13	9
Survey Response					
Survey Response - # CFLs Installed	9.6	9.5	11.4	10.5	8.8
# of CFLs In Use	9.2	9.1	10.9	10.2	8.6
# of CFLs used > 30 minutes/day	5.7	5.6	6.1	6.0	5.1
# of CFLs used > 4 hours/day	2.5	3.3	3.5	2.7	2.5

- **Installation and retention of efficient showerheads:** As with the CFLs, there were large differences by provider in the installation rates of efficient showerheads. MHYC and SWCC installed an average of .8 showerheads per client served and CRR installed an average of .5 showerheads per client served. Except for WCCC, respondent reports on the number of showerheads installed and retained correlate with the provider reports. While 62 percent of MHYC clients reported that an efficient showerhead was still in use, 40 percent of CRR clients reported that an efficient showerhead was still in use.

Table ES-11
Comparison of Direct Install Providers
Showerhead Installation and Retention

	Direct Install Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Provider Reports - Mean # of Showerheads Installed	.8	.7	.7	.8	.5
Survey Response					
% with Showerhead Installed	67%	58%	47%	53%	41%
% with Showerhead Still in Use	62%	53%	46%	49%	40%

- **Provider changed hot water temperature:** There were differences in the percent of clients who reported that the provider changed their hot water temperature, by direct install provider. MHYC respondents were most likely to report that the provider changed the temperature. While 26 percent of MHYC respondents reported that the provider changed the temperature, only eight percent of WCCC respondents reported that the provider changed the temperature.
- **Receipt and use of water temperature thermometers:** There were large differences by provider in the percentage of clients who recalled that they received a thermometer to measure the hot water temperature and that they had used it. While 71 percent of CRR clients reported that they received a thermometer and 37 percent reported that they had used it, only six percent of WCC clients reported that they received a thermometer and six percent reported that they had used it.

Table ES-12
Comparison of Direct Install Providers
Recall and Use of Water Temperature Thermometer

	Direct Install Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Provider Changed Hot Water Temperature	26%	19%	15%	8%	13%
Client Retained Temperature Change	24%	17%	10%	6%	13%
Recalled Receipt of Water Temperature Thermometer	37%	52%	54%	6%	71%
Understand How to Use Thermometer	33%	50%	50%	6%	69%
Used Thermometer	17%	22%	29%	2%	37%

- **Provider changed refrigerator temperature:** There were differences in the percent of clients who reported that the provider changed their refrigerator or freezer temperature, by direct install provider. MHYC respondents were most likely to report that the provider changed the temperature. While 28 percent of MHYC respondents reported that the provider changed the temperature, only five percent of WCCC respondents reported that the provider changed the temperature.

- **Receipt and use of refrigerator/freezer thermometers:** There were also differences by provider in the percentage of clients who recalled that they received a thermometer to measure the refrigerator/freezer temperature and that they had used it. While 77 percent of CRR clients reported that they received a thermometer and 49 percent reported that they had used it, only eight percent of WCC clients reported that they received a thermometer and four percent reported that they had used it.

Table ES-13
Comparison of Direct Install Providers
Recall and Use of Refrigerator Thermometer

	Direct Install Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Provider Changed Refrigerator/Freezer Temperature	28%	23%	10%	5%	23%
Respondent Retained Change	26%	22%	7%	4%	21%
Recalled Receipt of Refrigerator Thermometer	41%	62%	67%	8%	77%
Understand How to Use Thermometer	37%	57%	64%	8%	74%
Used Thermometer	21%	38%	47%	4%	49%

- **Change in other energy use behaviors:** SWCC, CYYCL, and MHYC respondents were most likely to report that they made other changes in energy use behavior after receiving service delivery and WCCC and CRR respondents were least likely to report that they made other changes. However, there were not consistent differences by provider when prompted with specific changes made since receipt of services.

Table ES-14
Comparison of Direct Install Providers
Change in Other Energy Use Behaviors
After Receipt of Program Services

	Direct Install Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Changes Made After Service Delivery					
Other Changes to Reduce Energy Usage	26%	29%	30%	20%	22%
Reduced Use of Heat	9%	12%	7%	4%	5%
Reduced Use of Air Conditioning	4%	2%	1%	1%	7%
Got Rid of Extra Refrigerators/Freezers	5%	2%	3%	6%	6%
Turn Off Computers When Not in Use	7%	8%	9%	6%	10%
Turn Off Lights Not in Use	6%	4%	6%	6%	7%
Use Cold Water for Clothes Washing	11%	8%	5%	6%	9%

- **Overall program ratings:** MHYC respondents were most likely to report that the program was very helpful in teaching about energy use and ways to reduce energy costs, and to report that their energy bills are lower, and WCCC respondents were least likely to report this.

Table ES-15
Comparison of Direct Install Providers
Overall Program Ratings

	Direct Install Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Program was Very Helpful	68%	63%	60%	48%	67%
Energy Bills are Lower	58%	55%	52%	44%	40%

Mass Mailing Provider Performance

Three different organizations were retained to send out the energy efficiency kits. There were also two different delivery approaches that were used – a simple mass mailing approach where kits were sent to all clients on a list, and a business reply card approach where clients had to send back a postage paid card to receive the kit. In all, there were four different combinations of providers and delivery methods.

- MHYC provided services through a direct mass mailing.
- Niagara provides services through a direct mass mailing.
- Niagara also provided services through a business reply card approach.
- RAP provided services through a business reply card approach.

While the billing analysis impact results will show whether there are differences in the effectiveness of the different providers and delivery methods, the survey results provide some preliminary information on their relative effectiveness. Key findings from the survey were:

Effectiveness of Providers

1. Within the pure direct mail providers, MHYC respondents were more likely than the Niagara pure direct mail respondents to report that they installed and retained the showerhead.
2. MHYC respondents were more likely than the Niagara pure direct mail respondents to report that they received and used the water temperature thermometer.
3. RAP respondents were more likely than the other respondents to report that they made other changes in their energy use behavior since receiving the energy kit.

Effectiveness of Mailing Approaches

1. Clients who respond to the business reply card to request a kit are more likely to install the showerheads, as Niagara BRC clients were more likely to install and retain the showerheads than Niagara direct mass mailing clients.
2. Niagara BRC clients were more likely to recall receipt and report that they used the water temperature thermometer than Niagara direct mass mailing clients.

3. The business replay card clients were more likely than the direct mail clients to report that their energy bills are lower since receipt of service delivery.
- **Installation and retention of efficient showerheads:** Niagara respondents were less likely than the other respondents to report that they installed the showerhead and it was still in use. Within the pure direct mail providers, MHYC respondents were more likely than the Niagara pure direct mail respondents to report that they installed and retained the showerhead. While 40 percent of MHYC clients retained the showerhead, only 26 percent of Niagara clients retained the showerhead.

These data also confirm that clients who respond to the business reply card to request a kit are more likely to install the showerheads, as Niagara BRP clients were more likely to install and retain the showerheads than Niagara direct mass mailing clients. While 41 percent of Niagara BRP clients installed and retained the showerheads, only 26 percent of Niagara direct mail clients installed and retained the showerheads.

Table ES-16
Comparison of Mass Mailing Providers
Showerhead Installation and Retention

	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRP
% with Showerhead Installed	42%	45%	33%	44%
% with Showerhead Still in Use	40%	43%	26%	41%

- **Receipt and use of water temperature thermometers:** Niagara respondents were less likely than the other respondents to report that they received the water thermometer, understood how to use it, and used the thermometer. However, they were not less likely than the other respondents to report that they lowered their hot water temperature. Within the pure direct mail providers, MHYC respondents were more likely than the Niagara pure direct mail respondents to report that they received and used the thermometer. While 27 percent of MHYC clients reported that they used the thermometer, only 17 percent of Niagara clients reported that they used the thermometer.

Niagara BRC clients were more likely to recall receipt and use the thermometer than Niagara pure direct mail clients. While 36 percent of Niagara BRP clients reported that they used the thermometer, only 17 percent of Niagara direct mail clients reported that they used the thermometer. However the difference in the percentage of clients who reported that they lowered their water temperature was not statistically significant.

Table ES-17
Comparison of Mass Mailing Providers
Recall and Use of Water Temperature Thermometer

	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRP
Recalled Receipt of Water Temperature Thermometer	66%	67%	48%	61%
Understand How to Use Thermometer	57%	60%	33%	56%
Used Thermometer	27%	43%	17%	36%
Lowered Water Temperature	25%	27%	26%	32%

- **Receipt and use of refrigerator/freezer thermometers:** RAP clients were more likely than MHYC clients to report that they received the thermometer, understood it, used it, and changed their refrigerator or freezer temperature settings. This is probably related to the fact that RAP clients received a digital thermometer and the MHYC clients received a thermometer card. (Niagara did not include a refrigerator thermometer in their kits.)

Table ES-18
Comparison of Mass Mailing Providers
Recall and Use of Refrigerator Thermometer

	Mass Mailing Kit Provider	
	MHYC	RAP
Recalled Receipt of Refrigerator/Freezer Thermometer	65%	78%
Understand How to Use Thermometer	58%	73%
Used Thermometer	42%	63%
Changed Settings	25%	40%

- **Change in other energy use behaviors:** RAP respondents were most likely to report that they made other changes in energy use behavior after receiving service delivery. This may be related to the more extensive and user-friendly education materials provided with the RAP energy kit. However, there were not consistent differences by provider when prompted for specific changes made since receipt of services. The differences that were statistically significant were that RAP clients were more likely to turn off their computers when not in use and to use cold water for clothes washing.

Table ES-19
Comparison of Mass Mailing Providers
Change in Other Energy Use Behaviors
After Receipt of Program Services

Changes Made After Service Delivery	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRP
Other Changes to Reduce Energy Usage	22%	43%	24%	30%
Reduced Use of Heat	15%	17%	12%	17%
Reduced Use of Air Conditioning	10%	10%	10%	3%
Got Rid of Extra Refrigerators/Freezers	2%	8%	5%	5%
Turn Off Computers When Not in Use	6%	20%	9%	4%
Turn Off Lights Not in Use	11%	12%	15%	3%
Use Cold Water for Clothes Washing	13%	23%	7%	6%

- **Reduced Energy Bills:** The business reply card clients were more likely than the other clients to report that their energy bills were lower since receipt of the energy kit.

Table ES-20
Comparison of Direct Install Providers
Overall Program Ratings

	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRP
Program was Very Helpful	51%	57%	53%	54%
Energy Bills are Lower	32%	48%	40%	49%

Energy Savings Estimates

Table ES-21 displays estimates of the cost-effectiveness of service delivery, given delivery statistics from provider reports and from the survey responses. The table makes the following assumptions:

Energy Costs

- Electric cost of \$.0906 per kWh.
- Gas cost of \$1.0250 per Therms.

Measure Retention Rates

- 90 percent of CFLs installed by providers are retained.
- 80 percent of the showerheads installed by providers are retained.

Measure Savings

- A 23 Watt CFL replaces a 100 Watt incandescent and is used an average of 2.4 hours per day.
- A 13 Watt CFL replaces a 60 Watt incandescent and is used an average of 2.4 hours per day.
- An efficient showerhead saves 14 therms/year.

Action Savings

- Hot water turndown saves 19 therms.
- Refrigerator turndown saves 125 kWh.
- Thermostat turndown saves 100 therms.
- Thermostat setback saves 34 therms.
- Computer turned off saves 292 kWh.
- Cold water laundry saves 30 therms.

Electric Baseload Gas Heating Increases

- Gas heating increases by .022 therms per kWh saved.

Discount Rate and Measure Life

- Discount rate of 5 percent.
- Measure life of 7 years for a CFL, 10 years for a showerhead, 3 years for behavior change

Based on the provider reports, the total savings estimates for the direct install service delivery are 618 kWh and 6 therms, for a net present value of \$331 in savings. Based on the survey reports, the total savings estimates for the direct install are 440 kWh and 9 therms for a net present value of \$251 in savings. (Note: estimated savings from measures alone was \$208.) The average cost for service delivery was \$228.

Table ES-21
Direct Install Savings Estimate

	Number per Client	kWh/therm Savings per Client	Net Present Value
Measures Installed – Provider Reports			
Provider Reports – CFLs	13	573 kWh	\$301
Provider Reports – Gas Heating Increase	--	-13 therms	-\$75
Provider Reports – Showerheads	.7	8 therms	\$62
Measures Installed – Survey Response			
Survey - CFLs in Use	9	395 kWh	\$207
Survey – Gas Heating Increase	--	-9 therms	-\$52
Survey - Showerheads in Use	.6	7 therms	\$53
Actions Taken			
Hot Water Turndown	.18	3 therms	\$10

	Number per Client	kWh/therm Savings per Client	Net Present Value
Refrigerator Temperature Change	.20	25 kWh	\$6
Thermostat Turndown	.09	6 therms	\$17
Turn off Computer	.07	20 kWh	\$5
Cold Water Laundry	.09	3 therms	\$8
Gas Heat Increase from Baseload Action Reduction	--	-1 therm	-\$3
Provider Report Totals			
Total kWh Savings		618 kWh	
Total Therm Savings		6 therms	
Net Present Value			\$331
Survey Estimate Totals			
Total kWh Savings		440 kWh	
Total Therm Savings		9 therms	
Net Present Value			\$251

Table ES-22 shows the savings estimates for workshop delivery. Based on the survey reports, the total savings estimates are 232 kWh and 32 therms for a net present value of \$201 in savings. (Note: the total savings from measures alone was \$96.) The average cost for service delivery was \$121.

Table ES-22
Workshop Savings Estimate

	Number per Client	kWh/Therm Savings per Client	Net Present Value
Measures Installed			
Survey - CFLs In Use	3	146 kWh	\$76
Survey – Gas Heating Increase	--	-3 therms	-\$19
Survey - Showerheads in Use	.44	5 therms	\$39
Actions Taken			
Hot Water Turndown	.42	8 therms	\$22
Refrigerator Temperature Change	.43	54 kWh	\$13
Thermostat Turndown	.27	18 therms	\$51
Turn off Computer	.11	32 kWh	\$8
Cold Water Laundry	.19	6 therms	\$16
Gas Heat Increase from Baseload Action Reduction	--	-2 therms	-\$5
Survey Estimate Totals			
Total kWh Savings		232 kWh	

	Number per Client	kWh/Therm Savings per Client	Net Present Value
Total Therm Savings		32 therms	
Net Present Value			\$201

Table ES-23 shows the savings estimates for mass mailing delivery. Based on the survey reports, the total savings estimates are 197 kWh and 16 therms for a net present value of \$140 in savings. (Note: the total savings estimate for measures alone was \$84.) The average cost for service delivery ranged from \$21 to \$43.

Table ES-23
Mass Mailing Savings Estimate

	Number per Client	kWh/Therm Savings per Client	Net Present Value
Measures Installed			
Survey - CFLs in Use	3	146 kWh	\$76
Survey – Gas Heating Increase	--	-3 therms	-\$19
Survey - Showerheads in Use	.31	3 therms	\$27
Actions Taken			
Hot Water Turndown	.26	5 therms	\$14
Refrigerator Temperature Change	.22	28 kWh	\$7
Thermostat Turndown	.13	9 therms	\$24
Turn off Computer	.08	23 kWh	\$6
Cold Water Laundry	.10	3 therms	\$8
Gas Heat Increase from Baseload Action Reduction	--	-1 therm	-\$3
Survey Estimate Totals			
Total kWh Savings		197 kWh	
Total Therm Savings		16 therms	
Net Present Value			\$140

Recommendations

Based on the survey results, we make the following recommendations for service delivery.

1. Use the business reply card approach for all mass mailing.
2. Enhance the education aspect of direct install service delivery, especially for WCCC.
3. Have MHYC provide additional training to WCCC.
4. Improve the education part of the mass mailing kit for MHYC and Niagara.

I. Introduction

Colorado's Governor's Energy Office (GEO) implemented new energy efficiency initiatives in 2006 to improve the energy efficiency of low-income homes. The initiatives include the First Response Program to provide low-cost, cost-effective energy efficiency measures and education to Low-Income Energy Assistance Program (LEAP) eligible households. APPRISE was hired by GEO in April 2007 to conduct an evaluation of the initial implementation of the First Response Program. This report presents initial findings from the First Response Process Evaluation.

A. *Client Survey*

APPRISE conducted a survey of households who received CO First Response Program services in 2007 to collect information on the program effectiveness overall and to compare the effectiveness of the program for the three delivery methods utilized: direct install, workshop, and mass mailing. The survey addressed the following topics:

- Household energy costs and health issues
- Recall and retention of energy efficiency measures received or installed
- Energy saving actions
- Satisfaction with efficiency measures and services

B. *Organization of the Report*

Four sections follow this introduction.

- Section II – Survey Methodology: This section describes the survey design and implementation and the survey response rates.
- Section III – Demographics: This section describes the demographics of the program recipients, based on analysis of the LEAP database and additional information from the survey.
- Section IV – Recall and Retention of Energy Efficiency measures: This section compares provider statistics to respondent recall of measure installation, and analyzes retention rates for measures.
- Section V – Energy Saving Actions: This section describes findings on respondents' actions to reduce energy usage as a result of program services.
- Section VI – Potential for Additional Energy Saving Actions: This section provides information on the potential for savings from education on additional behavioral changes.

- Section VII – Satisfaction with Program Services: This sections describes respondents satisfaction with program services.
- Section VI – Summary of Findings and Recommendations: This section provides a summary of the key findings and recommendations for the First Response Program based on the client survey.

APPRISE prepared this report under contract to Colorado’s Governor’s Energy Office (GEO). GEO and the providers facilitated this research by furnishing program data to APPRISE. Any errors or omissions in this report are the responsibility of APPRISE. Further, the statements, findings, conclusions, and recommendations are solely those of analysts from APPRISE and do not necessarily reflect the views of the GEO.

II. Methodology

This section describes procedures for sample selection, survey implementation, and the survey response rates.

A. Sample Selection

The survey sample was designed to furnish data on First Response Program Services in three delivery method groups: direct install, workshop, and mass mailing. The sample includes clients who were served in the first six months of service delivery – January through June 2007.

The sample frame was stratified by service delivery type and service delivery vendor. Less common delivery methods and service providers were oversampled to provide a significant sample size for each organization and delivery method. Table II-1 displays how the sample frame was stratified, the number of households in the sample frame, and the number of households selected.

Table II-1
Sample Frame Description

Delivery Method	Provider	Clients	Clients with Phone Number	Number Selected
Direct Install	MHYC	1138	1134	400
	CYYLC	572	570	200
	SWCC	230	218	200
	WCCC	254	245	200
	CRR	215	196	196
Workshop	EOC	408	274	274
Mass Mailing	MHYC	3487	3371	400
	Niagara	9905	9670	400
Mass Mailing with Return Card	Niagara	580	447	300
	RAP	838	699	400

Results shown by delivery method are weighted to correct for sample selection and response rates.

B. Survey Implementation

APPRISE sent an advance letter to all clients who were selected for the survey. This letter notified clients that they would be called to participate in the survey, explained the purpose of the survey, and provided the option to call into the phone center to complete the survey at their convenience.

APPRISE retained Braun Research to conduct the survey through its phone center. Researchers from APPRISE trained Braun's employees on the survey instrument and

monitored survey implementation. Braun's manager in charge of the survey instructed interviewers how to use the computerized version of the survey to record responses.

APPRISE staff trained Braun employees on the 10-minute survey in two-hour training sessions for the day and evening interviewers. Training included an explanation of the Colorado First Response Program, an introduction to the Program's population, an explanation of field codes included in the survey instrument, an overview of each question, and in-depth discussion of survey questions that required special attention.

Interviewer monitoring allowed APPRISE researchers to both listen to the interviewers conduct surveys and see the answers they chose on the computerized data entry form. Braun's manager facilitated open communication between the monitors and interviewers, which allowed the monitors to instruct interviewers on how to implement the survey and accurately record responses.

C. *Response Rates*

Table II-2 details the number of clients selected to complete the survey, number of completed interviews, cooperation rates, and response rates for each of the three groups. The table presents the following information for the sample:

- **Number selected:** There were 2970 First Response Program clients selected to complete the survey. Of the 2970 selected, 1196 were visited by program providers (direct install group), 274 received the kit through an agency (workshop group); and 1500 received the kit in the mail (mass mailing group).
- **Unusable:** There were 758 cases deemed unusable because phone numbers were busy, disconnected, or incorrect.² These households are not included in the denominator of the response rate or the cooperation rate. They are included in the denominator of the completed interview rate.
- **Non-Interviews:** There were 361 cases classified as non-interviews because the qualified respondent refused to complete the interview, or because the respondent asked the interviewer to call back to complete the interview at a later time, but did not complete the interview during the field period. These households are included in the denominator of the cooperation rate, the response rate, and the completed interview rate.
- **Unknown eligibility:** There were 403 cases that were determined to have unknown eligibility to complete the interview, due to answering machines, no answers, and language barriers. These households are not included in the denominator of the cooperation rate. They are included in the denominator of the response rate and the completed interview rate.

² Seven hundred fifty-eight cases were deemed unusable because phone numbers were disconnected, or incorrect. This may be related to incorrect client information or to interruptions in telephone services.

- **Not eligible – named respondent deceased:** There were 14 cases that were deemed not eligible to complete the interview because the named respondent had died since receiving First Response Program Services. These households are not included in the denominator of the response rate or the cooperation rate. They are included in the denominator of the completed interview rate.
- **Completed interviews:** The completed interviews are households that were reached and that answered the full set of survey questions. In total, 1434 interviews were completed.
- **Cooperation rate:** The cooperation rate is the percent of eligible households contacted who completed the survey. This is calculated as the number of completed interviews divided by the interviews plus the number of non-interviews (refusals plus non-completed call backs). Overall, this survey achieved an 80 percent cooperation rate.
- **Response rate:** The response rate is the number of completed interviews divided by the number of completed interviews plus the number of non-interviews (refusals plus non-completed call backs) plus all cases of unknown eligibility (due to answering machines and language barriers). Overall, this survey attained a 65 percent response rate: 74 percent for direct install participants, 60 percent for workshop participants, and 57 percent for mass mailing participants.
- **Completed Interview Rate:** The completed interview rate is the percentage of households selected that completed the survey. Overall, this survey attained a 48 percent completed interview rate: 64 percent for direct install participants, 39 percent for workshop participants, and 38 percent for mass mailing participants.

Table II-2
Survey Response Rates

	Delivery Method			Total
	Direct Install	Workshop	Mass Mailing	
Number selected	1196	274	1500	2970
Unusable	163	98	497	758
Non-interviews	126	33	202	361
Unknown eligibility	138	37	228	403
Not eligible – deceased	4	0	10	14
Completed interviews	765	106	563	1434
Cooperation rate	86%	76%	74%	80%
Response rate	74%	60%	57%	65%
Completed interview rate	64%	39%	38%	48%

III. Demographics

This section examines the demographic characteristics of survey respondents. Most of these data were obtained from Colorado's LEAP database. Because of the format of the data provided by the workshop vendor, data for most of these clients could not be merged with the LEAP database, and these data are not provided for the workshop clients. Some additional demographic information was obtained in the client survey.

The LEAP database contained information on the percent of households with a vulnerable member. Table III-1 shows that approximately 40 percent of households had an elderly member, 35 percent had a disabled member, and 20 percent had a young child.

Table III-1
Presence of Vulnerable Household Members

LEAP Database Information		
	Delivery Method	
	Direct Install	Mass Mailing
Number of Households	765	563
Elderly (60+)	40%	38%
Disabled	37%	34%
Young Child (5 or younger)	16%	18%

Table III-2 examines the percentage of households with a vulnerable member by direct install provider. This table shows that there are some differences in the types of households served by the different providers.

- While 55 percent of households served by SWCC have an elderly member, only 36 percent of those served by CYYCL, 38 percent of those served by MHYC, 39 percent of those served by CRR, and 45 percent of those served by WCCC have an elderly member.
- A greater percentage of households served by CYYCL had a disabled household member. While 43 percent of those served by CYYCL had a disabled member, only 28 percent of those served by WCCC and SWCC, 35 percent of those served by CRR, and 38 percent of those served by MHYC had a disabled member.
- CRR respondents were most likely to have a young child in the household. While 20 percent of those served by CRR had a young child, 11 percent of those served by SWCC, 15 percent of those served by CYYCL, 17 percent of those served by MHYC, and 18 percent of those served by WCCC had a young child.

Table III-2
Presence of Vulnerable Household Member
By Direct Install Provider

LEAP Database Information					
	Direct Install Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Households	246	143	115	139	122
Elderly (60+)	38%	36%	55%	45%	39%
Disabled	38%	43%	28%	28%	35%
Young Child (5 or younger)	17%	15%	11%	18%	20%

There were also some differences in the presence of vulnerable household members in the direct mail provider respondents.

- The MHYC respondents were most likely to have a disabled household member. While 38 percent of the MHYC respondents had a disabled household member, 28 percent of the Niagara BRC respondents had a disabled household member.
- The Niagara respondents were most likely to have a young child in the household. While 20 percent of the Niagara respondents had a young child in the household, 11 percent of the Niagara BRC respondents had a young child in the household.

Table III-3
Presence of Vulnerable Household Member
By Mass Mailing Provider

LEAP Database Information				
	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRC
Number of Households	110	221	81	151
Elderly (60+)	35%	41%	38%	40%
Disabled	38%	36%	32%	28%
Young Child (5 or younger)	16%	17%	20%	11%

Table III-4 displays data on home ownership that was obtained from the LEAP database. Approximately 45 percent of the respondents own their homes.

Table III-4
Home Ownership

LEAP Database Information		
	Delivery Method	
	Direct Install	Mass Mailing
Number of Households	765	563
Own	48%	45%
Rent	52%	55%

Table III-5 shows that there is some variability in the percent of respondents who own their homes by direct install service provider. While 60 percent of WCCC respondents and 54 percent of MHYC and CRR respondents own their homes, only 33 percent of CYCYL respondents and 41 percent of SWCC respondents own their homes.

Table III-5
Home Ownership
By Direct Install Provider

LEAP Database Information					
	Delivery Method				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Households	246	143	115	139	122
Own	54%	33%	41%	60%	54%
Rent	46%	67%	59%	40%	46%

There was also variability in the percentage of respondents who own their homes by mass mailing provider. While 58 percent of RAP respondents and 56 percent of Niagara BRC respondents own their homes, only 43 percent of Niagara and 44 percent of MHYC respondents own their homes.

Table III-6
Home Ownership
By Mass Mailing Provider

LEAP Database Information				
	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRC
Number of Households	110	221	81	151
Own	44%	58%	43%	56%
Rent	56%	42%	57%	44%

Table III-7 presents data on the respondents' heating fuel that was obtained from the LEAP database. Approximately 95 percent of the respondents use natural gas for heating, and a few percent use electricity and propane.

**Table III-7
Heating Fuel**

LEAP Database Information		
	Delivery Method	
	Direct Install	Mass Mailing
Number of Households	765	563
Natural Gas	95%	95%
Electricity	3%	1%
Propane	3%	3%
Wood	0%	1%
Oil	0%	<1%
Coal	0%	<1%

Table III-8 shows that respondents served by some of the direct install providers were more likely to use natural gas for heating. While all of the MHYC and WCC respondents used natural gas for heating, only 71 percent of SWCC, 92 percent of CYYCL, and 93 percent of CRR respondents used natural gas for heating.

**Table III-8
Heating Fuel
By Direct Install Provider**

LEAP Database Information					
	Delivery Method				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Households	246	143	115	139	122
Natural Gas	100%	92%	71%	100%	93%
Electricity	0%	6%	10%	0%	2%
Propane	0%	1%	19%	0%	5%

Table III-9 shows respondents' heating fuel by mass mailing provider. Niagara BRC respondents are much less likely than the other respondents to use sources other than natural gas for heat. Twenty-three percent of these respondents use propane and nine percent use wood for their main heating fuel.

**Table III-9
Heating Fuel
By Mass Mailing Provider**

LEAP Database Information				
	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRC
Number of Households	110	221	81	151
Natural Gas	98%	95%	96%	60%
Electricity	2%	3%	0%	6%
Propane	0%	1%	2%	23%
Oil	0%	0%	0%	1%
Coal	0%	0%	0%	1%
Wood	0%	0%	1%	9%

Table III-10 displays information on poverty level and income that was obtained from the LEAP database. About half of the respondents have income below the poverty level, about one third have income between 100 and 150 percent of the poverty level, and about 15 percent have income above 150 percent of the poverty level. Mean household income is about \$13,000.

**Table III-10
Poverty Level and Mean Household Income**

LEAP Database Information		
	Delivery Method	
	Direct Install	Mass Mailing
Number of Households	765	563
< =100%	50%	47%
101% - 125%	22%	21%
126% - 150%	14%	16%
>150%	14%	16%
Mean Household Income	\$12,635	\$13,124

Table III-11 displays the poverty level and mean household income by direct install service provider. The table shows that CRR respondents are most likely to have income above the poverty level. While 63 percent of CRR respondents have income above the poverty level, only 49 percent of CYYCL, 48 percent of SWCC, 47 percent of MHYC, and 55 percent of WCCC respondents have income above the poverty level. Mean household income is \$15,781 for CRR respondents, compared to \$11,933 for MHYC respondents.

Table III-11
Poverty Level and Mean Household Income
By Direct Install Provider

LEAP Database Information					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Households	246	143	115	139	122
<= 100%	53%	51%	52%	45%	37%
101% - 125%	23%	24%	17%	18%	25%
126% - 150%	14%	13%	17%	16%	16%
>150%	11%	13%	14%	22%	22%
Mean Household Income	\$11,933	\$12,676	\$12,205	\$13,417	\$15,781

Table III-12 displays poverty level and mean household income by mass mailing provider. RAP respondents are most likely to have income above 125 percent of the poverty level. While 42 percent of RAP respondents have income above 125 percent of the poverty level, only 28 percent of MHYC, 32 percent of Niagara, and 36 percent of Niagara BRC respondents have income above 125 percent of the poverty level.

Table III-12
Poverty Level and Mean Household Income
By Mass Mailing Provider

LEAP Database Information				
	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRC
Number of Households	110	221	81	151
<= 100%	48%	42%	47%	51%
101% - 125%	25%	17%	21%	14%
126% - 150%	14%	21%	16%	17%
>150%	14%	21%	16%	19%
Mean Household Income	\$13,303	\$14,227	\$12,939	\$13,609

The next few tables provide household demographic information from the survey responses.

Respondents were asked what the cost of electricity, gas, and other fuels was for their home in the past 12 months. At least 20 percent of respondents in each category reported that they spend \$1500 or more on electricity, gas, and other fuels, as shown in Table III-13. Respondents who received workshop service delivery were more likely than other respondents to report that their

bills were \$1,500 or more. While 38 percent of workshop clients reported bills of \$1500 or more, 20 percent of direct install clients and 24 percent of mass mailing clients reported that their bills were this high.

Table III-13
Respondent Fuel Cost Estimate

In the past 12 months, what was the cost of electricity, gas, and other fuels (oil, coal, kerosene, wood, etc.) for your home?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
<\$500	3%	1%	2%
\$500-\$1000	24%	14%	26%
\$1,000-\$1,500	25%	29%	22%
\$1,500-\$2,000	10%	14%	14%
\$2,000 or more	10%	24%	10%
Don't know	27%	18%	26%
Refused	1%	0%	1%

Respondents were asked how difficult it is for them to pay their monthly energy bills. Table III-14 displays the responses to this question. More than three-quarters of respondents in each group reported that it is either very or somewhat difficult to pay their energy bills. Clients who received the workshop delivery method were more likely than those in the other groups to report that their monthly energy bills are very or somewhat difficult to pay. While 91 percent of workshop respondents reported that their bills are very or somewhat difficult to pay, 81 percent of direct install respondents and 77 percent of mass mailing clients reported that their bills are very or somewhat difficult to pay. It is expected that these respondents would be more likely to report difficulty paying their bills, as workshop participants received program services when they visited community agencies to obtain assistance with their energy bills.

Table III-14
Respondent Rating of Difficulty to Pay Energy Bills

How difficult is it to pay your monthly energy bills?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Very difficult	42%	52%	38%
Somewhat difficult	39%	39%	39%
Not too difficult	13%	8%	16%
Not at all difficult	6%	2%	7%

How difficult is it to pay your monthly energy bills?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Don't know	1%	0%	0%

Respondents were asked how many household members have asthma or other respiratory problems and how many have heart disease or other circulatory problems. These health issues impact clients' ability to deal with temperature extremes and may impact the safe recommendations for heating and cooling temperature settings. Table III-15 shows the percentage of households in each group that have at least one member with each of these medical conditions. More than 40 percent of all respondents stated that one or more household members have asthma or respiratory problems. Heart disease and circulatory problems were less commonly cited; between 23 and 32 percent of respondents reported that one or more individuals in the household have these conditions. Households that received workshop services were more likely than other delivery method recipients to report that someone in the household had asthma or respiratory problems. While 55 percent of workshop respondents said that someone in the household had asthma or respiratory problems, about 40 percent of the other groups said that someone in the household had these medical problems.

Table III-15
Number of Household Members with Medical Conditions

How many people who normally live in this household have asthma or other respiratory problems? How many have heart disease or other circulatory problems?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Asthma or other respiratory problems	42%	55%	41%
Heart disease or other circulatory problems	28%	32%	23%

IV. Recall and Retention of Energy Efficiency Measures

This section examines the incidence of installation of the energy-saving devices, the rate of retention of these devices, and the clients' satisfaction with them.

Respondents who received energy-saving kits through the mail or at an agency were asked to report the number of light bulbs included in the kit. Workshop clients received two CFLs in their kit and mass mailing clients received four CFLs. Table IV-1 shows that the responses roughly corresponded to these numbers, as 65 percent of respondents who received the kits at an agency stated that they received two light bulbs, while 56 percent of those who received the kit in the mail reported that they received four light bulbs. Additionally, the mean number of light bulbs reported by workshop and mass mailing recipients was equal to the numbers that each group, respectively, received in their kits.

Table IV-1
Light Bulbs Received in Kit

How many light bulbs did you receive in the kit?		
	Delivery Method	
	Workshop	Mass Mailing
Number of Respondents	106	563
Mean	2	4
1	7%	0%
2	65%	11%
3	14%	15%
4	9%	56%
5 or more	0%	13%
Don't know	5%	5%

Workshop clients and clients who received the mailed kit from MHYC were given a postcard that allowed them to request additional CFLs. The workshop clients could request up to eight additional CFLs and the MHYC clients were asked to check a box if they would like additional measures. Table IV-2 shows that respondents who received the kit at an agency were about twice as likely to request additional bulbs as those who received the kit through the mail. This is expected because of the way the request for additional bulbs was framed and because workshop recipients received two bulbs, as compared to the mass mailing clients who received four bulbs. Note that this question was asked of all respondents who visited an agency, but only the mass mailing respondents who received kits via MHYC.

Table IV-2
Additional Light Bulbs Requested

Did you request additional light bulbs?		
	Delivery Method	
	Workshop	Mass Mailing (MHYC only)
Number of Respondents	106	110
Yes	33%	15%
No	66%	86%
Don't know	1%	0%

Respondents who received the kit at an agency through the workshop approach were asked how many bulbs they requested. Table IV-4 shows that 74 percent of workshop respondents who requested additional light bulbs requested six or more bulbs, and the mean number requested was 7.

Table IV-3
Number of Additional Light Bulbs Requested

How many additional light bulbs did you request?	
	Delivery Method
	Workshop
Number of Respondents	35
Mean	7
1-2	0%
3-5	9%
6-9	71%
10 or more	3%
Don't know	17%

Respondents who received direct install service delivery were asked how many bulbs the providers installed and respondents who received the workshop or mass mailing services were asked how many bulbs they installed. As expected, Table IV-4 shows that respondents in the direct install group reported more light bulbs installed than respondents in either of the other delivery method groups reported. Provider reports showed that direct install clients received a mean of 13 CFLs, compared to the two bulbs provided in the initial workshop kit and the four bulbs provided in the mass mailing kits. Seventy-eight percent of the direct install households reported that they had five or more bulbs installed by providers and they reported an average of 10 CFLs installed. The workshop and mass mailing households reported a mean of three bulbs installed.

It is important to note that the workshop and mass mailing clients reported the same number of bulbs installed. While the workshop recipients received only two bulbs in their kit, one third of these clients requested additional bulbs, and the mean number requested was seven. This calculates to an average of about four bulbs received by workshop clients. Only a small percentage of mass mailing clients requested additional bulbs, since this option was only offered to less than 25 percent of mass mailing clients, and only about 15 percent of these clients requested additional bulbs. Therefore, the mean number of bulbs received by mass mailing and workshop clients was about the same, and the mean number installed was about three, or about 75 percent of the bulbs that were received.

Table IV-4
Number of Light Bulbs Installed

How many light bulbs were installed? How many light bulbs did you install?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Mean	10	3	3
0	3%	3%	10%
1-4	9%	86%	80%
5-9	34%	3%	8%
10-14	30%	0%	0%
15 or more	14%	2%	0%
Don't know	10%	5%	2%
Refused	0%	2%	0%

Provider reports showed variation in the mean number of bulbs furnished by the different youth corps. Southwestern Conservation installed an average of 15.2 bulbs per home visited, while CO Range Riders installed an average of 9.1 bulbs. Table IV-5 shows that differences in respondent reports are consistent with these differences, as SWCC respondents reported the greatest number of bulbs installed and CRR reported the lowest number of bulbs installed. While 59 percent of CRR clients reported fewer than ten bulbs installed, only 40 percent of SWCC clients reported fewer than ten bulbs installed. However, SWCC respondents reported a mean of 11 CFLs installed, compared to the mean of 15 in the provider reports.

Table IV-5
Number of Light Bulbs Installed by Direct Install Service Provider

How many light bulbs were installed?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Mean	10	10	11	10	9
0	2%	4%	4%	2%	7%
1-4	9%	9%	6%	4%	18%
5-9	36%	34%	30%	29%	34%
10-14	34%	27%	25%	32%	25%
15 or more	11%	15%	18%	22%	13%
Don't know	9%	11%	16%	12%	4%

Respondents were asked how many of the bulbs were still in use to assess the retention of CFLs. Table IV-6 shows between 80 and 90 percent of the respondents reported that all of the installed bulbs were still in use. A slightly greater percentage of direct install households have discontinued use of one or more of the bulbs than in either of the other delivery method groups. While 18 percent of the direct install respondents reported that one or more of the CFLs were no longer in use, five percent of the workshop respondents and 11 percent of the mass mailing clients reported that one or more of the bulbs were no longer in use. This is as expected, because the bulbs were installed by the service providers and a greater number of bulbs were installed for the direct install clients.

Table IV-6
Number of Light Bulbs No Longer Used

How many of the light bulbs that were installed are no longer in use?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	739	103	505
0	81%	90%	87%
1	10%	3%	9%
2-4	6%	2%	2%
5 or more	2%	0%	0%
Don't know	0%	4%	1%
Refused	0%	1%	0%

Respondents who reported that they were no longer using one or more of the light bulbs were asked why the light bulbs are no longer in use. Table IV-7 shows that the most common reasons

for discontinued use of the bulbs are that they burnt out or broke. Between five and nine percent of respondents reported that one or more bulbs were no longer in use because they burnt out or broke.

Table IV-7
Reason for Discontinued Use

Why are some of the light bulbs no longer in use?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	739	103	505
Burnt out	5%	2%	6%
Broke	<1%	6%	3%
Didn't like color/way they looked	1%	0%	0%
Not bright enough	1%	0%	<1%
Light flicker	1%	0%	<1%
Other	1%	0%	<1%
Don't know	8%	2%	2%
Refused	<1%	0%	0%
All bulbs still in use	81%	90%	87%

Respondents were asked how many of the light bulbs were used less than 30 minutes per day. Table IV-8 shows that more households in the direct install group use more of the installed light bulbs less than 30 minutes each day than households in the other groups. Again, this is to be expected, because bulbs were installed by providers rather than by clients and many more bulbs were installed in these homes. Seventy-four percent of the households in the direct install group reported that they use at least one of the installed light bulbs less than 30 minutes per day, while 42 percent of the workshop respondents and 49 percent of the mass mail respondents reported that they use one or more CFLs for 30 minutes or less. Direct install clients reported that they used an average of four of their average of ten installed bulbs less than 30 minutes each day, compared to the other groups who reported that they used an average of one bulb of their three installed bulbs fewer than 30 minutes each day.

Table IV-8
Number of Light Bulbs Used for a Short Time Period

How many of the light bulbs that were installed are used less than 30 minutes per day?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	737	97	494
Mean	4	1	1

How many of the light bulbs that were installed are used less than 30 minutes per day?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
0	18%	54%	49%
1	11%	26%	23%
2	12%	11%	15%
3	11%	2%	4%
4	10%	3%	7%
5-9	24%	0%	1%
10 or more	6%	0%	0%
Don't know	8%	4%	2%

Table IV-9 shows that clients' reports on the number of CFLs that are used less than 30 minutes each day varies by service provider. Although SWCC service providers installed more bulbs in each household as shown in Table IV-5, these clients report CFLs are used for under 30 minutes each day. A larger number of CFLs installed by WCCC service providers are used for less than 30 minutes. While 45 percent of MHYC respondents, 43 percent of SWCC respondents, 42 percent of CYYCL respondents, and 38 percent of CRR respondents reported that they had 10 or more bulbs that were used fewer than 30 minutes each day, 54 percent of percent of WCCC respondents reported 10 or more bulbs used fewer than 30 minutes each day.

Table IV-9
Number of Light Bulbs Used for a Short Time Period
By Direct Install Service Provider

How many of the light bulbs that were installed are used less than 30 minutes per day?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	240	136	109	135	114
Mean	4	3	3	5	3
0	2%	4%	4%	2%	7%
1-4	9%	9%	6%	4%	18%
5-9	36%	34%	30%	29%	34%
10-14	34%	27%	25%	32%	25%
15 or more	11%	15%	18%	22%	13%
Don't know	9%	11%	16%	12%	4%

Clients were also asked how many light bulbs were used more than four hours each day. Table IV-10 shows that direct install clients reported an average of three bulbs used more than four hours and workshop and mass mailing clients reported an average of one bulb used more than four hours each day. Eighteen percent of direct install clients reported between five and nine

bulbs that are used more than four hours and four percent reported ten or more bulbs. In approximately one-third of the households in each group, clients reported that none of the installed light bulbs are used more than four hours per day.

Table IV-10
Number of Light Bulbs Used for an Extended Time Period

How many of the light bulbs that were installed are used more than 4 hours per day?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	628	93	494
Mean	3	1	1
0	29%	33%	34%
1	11%	36%	25%
2	15%	24%	25%
3	12%	4%	7%
4	10%	2%	4%
5-9	18%	0%	2%
10 or more	4%	0%	0%
Don't know	3%	1%	3%

Respondents were also asked about their overall satisfaction with the CFLs. More than 90 percent of the respondents in each group reported that they are satisfied with the light bulbs, and more than 80 percent in each group reported that they are very satisfied, as shown in Table IV-11.

Table IV-11
Overall Satisfaction with the Light Bulbs

How satisfied are you with the light bulbs?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	741	103	505
Very satisfied	83%	84%	85%
Somewhat satisfied	13%	8%	11%
Somewhat dissatisfied	3%	0%	2%
Very dissatisfied	1%	0%	1%
Don't know	1%	9%	0%

Respondents who were either very or somewhat satisfied with the light bulbs were asked why they were satisfied. Table IV-12 displays the reasons respondents provided for being satisfied

with the light bulbs. Answers total more than 100 percent because respondents could provide more than one response.

The most commonly cited reason for satisfaction was the quality of the light provided by the bulbs. References to the energy efficiency of the bulbs, savings on utility bills, and extended life of the bulbs were all common responses from respondents in each of the groups. Respondents in the mass mailing group were less likely to report that the bulbs save them money than the direct install and workshop clients.

Table IV-12
Reasons for Satisfaction with the Light Bulbs

Why do you say that you are satisfied?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	709	94	486
Provide good lighting	46%	53%	51%
Use less energy	36%	43%	35%
Save money	27%	26%	14%
Don't need to replace bulbs as often	23%	25%	25%
Like the color of the light	10%	17%	13%
They work/work well	4%	2%	5%
Not as hot as other bulbs	3%	0%	4%
Were free	2%	0%	3%
Appearance of bulb	0%	2%	0%
Dissatisfied comment	3%	0%	2%
Not specified	2%	0%	3%
Other	2%	2%	2%
Don't know	2%	0%	1%

Respondents who were dissatisfied with the light bulbs were asked why they were dissatisfied. Table IV-13 displays the reasons respondents provided for their dissatisfaction. None of the respondents in the workshop group were dissatisfied with the bulbs; therefore there is no data for this group. Answers total more than 100 percent because respondents could provide more than one response.

The most commonly cited reason for dissatisfaction was that the light bulbs are not bright enough. Other common reasons were that the bulbs burnt out or broke or that the respondents did not like the color of the light emitted from the bulbs.

Table IV-13
Reasons for Dissatisfaction with the Light Bulbs

Why do you say that you are dissatisfied?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	28	0	16
Not bright enough	60%	-	60%
Bulbs burnt out/broke	23%	-	29%
Don't like the color of the light	9%	-	29%
Take too long to light up	0%	-	8%
Other	22%	-	9%

Provider reports showed that direct install providers installed efficient showerheads in approximately 70 percent of the homes they served. Workshop kits and mass mailing kits included an efficient showerhead for the client to install.

Direct install clients were asked whether showerheads were installed for them by the service providers and kit recipients were asked whether they installed the showerhead. Table IV-14 shows that respondents in the direct install group more frequently reported that they had showerheads installed by service providers than were reported installed by kit recipients in either of the other groups. Fifty-eight percent of respondents in the direct install group reported that showerheads were installed by providers compared to 46 percent of the respondents in the workshop group and 36 percent in the mass mailing group.

Table IV-14
Showerhead Installation

Did the provider install any showerheads during the visit? Did you install the showerhead?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	58%	46%	36%
No	40%	54%	63%
Don't know	1%	0%	1%

Provider reports showed that MHYC and WCCC installed an average of .8 showerheads, CYYCL and SWCC installed an average of .7 showerheads, and CRR installed an average of .5 showerheads in client homes. Note: this average includes the installation of more than one showerhead in some homes.

The differences in client reports as to whether a showerhead was installed by provider were fairly consistent with the differences in provider reports. Table IV-15 shows that MHYC clients were most likely to report that a showerhead was installed; 66 percent of MHYC clients reported that a showerhead was installed. By comparison, 57 percent of CYYCL clients, 53 percent of WCCC clients, 46 percent of SWCC clients, and 41 percent of CRR clients reported that the provider installed an efficient showerhead.

Table IV-15
Showerhead Installation by Direct Install Service Provider

Did the provider install any showerheads during the visit?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	66%	57%	46%	53%	41%
No	33%	41%	52%	48%	58%
Don't know	1%	3%	2%	0%	1%

Service delivery providers developed different energy saving kits to send to respondents with different educational materials and packaging. They also employed different methods. MHYC and Niagara's one method involved a pure direct mailing of kits to clients with no previous communication. RAP and Niagara BRP first sent a business reply card to clients. In this method of delivery, only clients who returned the business reply card with a kit request were then sent the free energy kit. Table IV-16 shows that the MHYC and the two business reply card methods employed by RAP and Niagara yielded about 42 to 45 percent of clients who reported that they installed the showerheads. Niagara's other method, without the business reply card mailing, however, only yielded 33 percent of clients who said that they installed the showerhead. Because Niagara provided the same kit to the two different groups of clients, those who received a pure direct mail of the kit and those who had to request the kit with a postcard, this provides some evidence that greater installation rates will be achieved when a reply card is used. However, the difference is not very large, and just barely statistically significant.

Table IV-16
Showerhead Installation Rates
By Mass Mailing Kit Provider

Did you install the showerhead?				
	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRP
Number of Respondents	110	221	81	151
Yes	42%	45%	33%	44%
No	57%	54%	65%	56%

Did you install the showerhead?				
	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRP
Don't know	1%	1%	1%	0%

Respondents in the direct install group were asked how many showerheads were installed by the provider. Table IV-17 shows that slightly more than half of all respondents in this group reported that the providers had installed one showerhead and seven percent reported that the providers had installed more than one.

Table IV-17
Number of Showerheads Installed

How many showerheads were installed?	
	Delivery Method
	Direct Install
Number of Respondents	765
0	42%
1	51%
2 or more	7%

Respondents in the workshop group were asked if they had requested any additional showerheads. Twenty-two percent of the respondents in the workshop group stated that they had requested additional showerheads, as shown in Table IV-18.

Table IV-18
Additional Showerheads Requested

Did you request any additional showerheads?	
	Delivery Method
	Workshop
Number of Respondents	106
Yes	22%
No	77%
Don't know	1%

Respondents who reported that they installed one showerhead or who reported that provider installed one showerhead were asked if the installed showerhead was still in use. Table IV-19 shows that respondents in the direct install group were more likely than those in the mass mailing group to report that the showerhead was still in use. While 85 percent of those in the mass

mailing group reported that the showerhead was still in use, 93 percent of those in the direct install group reported that the showerhead was still in use.

Table IV-19
Retention Rate of Single Showerhead

Is that showerhead still in use?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	393	32	205
Yes	93%	97%	85%
No	7%	3%	16%

Respondents in the direct install group who stated that the providers installed more than one showerhead and those in the workshop group who had requested additional showerheads were asked how many of the showerheads that were installed are still in use. Table IV-20 shows that 97 percent of direct install respondents and 70 percent of workshop respondents reported that they had one or more showerheads that were still in use. Direct install respondents were also more likely to have more than one in use. While 82 percent of respondents in the direct install group still had multiple showerheads installed, only nine percent of those in the workshop did. (It is important to note that only a small percentage of respondents had more than one showerhead installed.)

Table IV-20
Retention Rate of Multiple Showerheads

How many of the showerheads that were installed are still in use?		
	Delivery Method	
	Direct Install	Workshop
Number of Respondents	53	23
0	4%	26%
1	15%	61%
2 or more	82%	9%

Respondents were asked how satisfied they were with the efficient showerheads. Table IV-21 shows that more than 90 percent of respondents in all groups were either very or somewhat satisfied with the showerheads and that more than three-quarters in all groups were very satisfied.

Table IV-21
Overall Satisfaction with Showerheads

How satisfied are you with the showerhead(s)?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	415	47	173
Very satisfied	77%	81%	79%
Somewhat satisfied	17%	17%	17%
Somewhat dissatisfied	2%	0%	1%
Very dissatisfied	1%	0%	3%
Don't know	2%	2%	0%

V. Energy Saving Actions

This section examines the energy saving actions taken by the service providers and/or respondents. Also considered in this section is the respondents' understanding of the use of thermometers provided in the kit.

Direct install clients were provided with thermometers to measure the temperature of their hot water during service delivery, and workshop and mass mailing clients received a thermometer in their energy kit. However, during APPRISE on-site inspections completed in Spring 2007, we found that many clients did not recall receiving the thermometer. The survey asked all of the respondents whether they received the thermometer to determine whether this was a significant issue for the Program. Table V-1 shows that 42 percent of respondents in the direct install group reported that they received a thermometer to measure water temperature, while 78 percent in the workshop group and 54 percent in the mass mailing group reported that they received them.

Table V-1
Receipt of Water Temperature Thermometer

Did you receive a thermometer to measure the water temperature?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	42%	78%	54%
No	52%	15%	40%
Don't know	6%	7%	6%

Recall of thermometer receipt by direct install clients is likely to be related to the level and quality of education that was provided by service providers. Table V-2 shows that there were significant differences in the percentage of respondents who reported that the direct install service providers provided thermometers to measure water temperature. Seventy-one percent of respondents who received services from CRR reported that they received a thermometer to measure water temperature while only six percent of respondents who received services from WCCC reported that they received one.

Table V-2
Receipt of Water Temperature Thermometer
By Direct Install Service Provider

Did you receive a thermometer to measure the water temperature?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	37%	52%	54%	6%	71%
No	56%	41%	42%	91%	25%
Don't know	7%	6%	4%	3%	3%
Refused	0%	1%	0%	0%	0%

Respondents who reported that they received a thermometer to measure water temperature were asked if they understand how to use it and whether they had used it to measure their water temperature. Table V-3 shows that respondents in the workshop group stated that they understand how to use the thermometer at a higher frequency than those in the direct install and mass mailing groups. While 67 percent of those in the workshop group reported that they received a thermometer and understood how to use it, approximately 40 percent in the mass mailing and direct install groups reported that they received a thermometer and understood how to use it.

Table V-3
Understanding of Water Temperature Thermometer

Do you understand how to use it?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	39%	67%	41%
No	3%	9%	8%
Don't know	1%	2%	4%
Thermometer not received	58%	22%	46%

Respondents were also asked whether they have used the thermometer. Again, the workshop group was most likely to report that they used a thermometer. Table V-4 shows that 48 percent of the workshop respondents reported that they received a thermometer and had used it, while only about 20 percent of the direct install and mass mailing respondents reported that they received a thermometer and had used it.

Table V-4
Use of Water Temperature Thermometer

Have you used the thermometer to measure the temperature of the hot water since the visit? Have you used the thermometer to measure the hot water temperature?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	20%	48%	22%
No	23%	29%	31%
Don't know	0%	0%	1%
Refused	0%	1%	0%
Thermometer not received	58%	22%	46%

Direct install clients were asked if the provider changed the temperature setting of their water heater and kit recipients were asked if they lowered the temperature setting of their water heater. Table V-5 shows that respondents in the workshop group more frequently reported that they had lowered the temperature setting than clients in the direct install and mass mailing groups. Forty-two percent of respondents in the workshop group reported that they had lowered the temperature setting compared to 26 percent of the respondents in the mass mailing group and 20 percent in the direct install group, which had the providers lower the setting during the visit.

Table V-5
Change in Water Heater Setting

Did the provider change the temperature setting of your water heater? Did you lower the temperature setting of the water heater?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	20%	42%	26%
No	71%	57%	73%
Don't know	9%	1%	1%
Refused	0%	1%	0%

There were differences in the frequency with which respondents served by different youth corps reported that their water temperature was changed. Table V-6 shows that respondents served by MHYC were most likely to report that the provider changed the temperature setting of the water heater. Respondents who were served by WCCC were least likely to report a change. While 26 percent of those served by MHYC reported that they temperature was changed, 19 percent of

those served by CYYCL, 15 percent of those served by SWCC, 13 percent of those served by CRR, and eight percent of those served by WCC reported a change.

Table V-6
Change in Water Heater Setting by Direct Install Service Provider

Did the provider change the temperature setting of your water heater?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	26%	19%	15%	8%	13%
No	65%	71%	76%	81%	84%
Don't know	9%	9%	10%	11%	3%
Refused	0%	1%	0%	0%	0%

Direct install clients were asked whether they raised the temperature setting of the water heater since the visit. Table V-7 shows that most of the respondents who reported that their water heater settings were changed during the visit reported that they maintained the new setting.

Table V-7
Maintenance of Water Heater Setting

Have you raised the temperature setting of the water heater (made it hotter) since the visit?	
	Delivery Method
	Direct Install
Number of Respondents	765
Yes	2%
No	18%
Don't know	0%
Setting not lowered	80%

Respondents in the workshop and mass mailing groups were asked whether they were satisfied with the lower setting on their hot water heaters. Most of the respondents in both groups who had lowered the temperature setting of the water heater stated that they were either very or somewhat satisfied with the lower setting, as shown in Table V-8.

Table V-8
Satisfaction with Temperature Setting

How satisfied are you with the lower setting?		
	Delivery Method	
	Workshop	Mass Mailing
Number of Respondents	44	146
Very satisfied	73%	65%
Somewhat satisfied	25%	23%
Somewhat dissatisfied	2%	8%
Very dissatisfied	0%	0%
Don't know	0%	3%

Direct install respondents were asked whether the service provider changed the thermostat setting for the furnace. Table V-9 shows that six percent of respondents reported that the service provider changed the thermostat setting.

Table V-9
Change in Thermostat Setting for Furnace

Did the provider change the thermostat setting for your furnace?	
	Delivery Method
	Direct Install
Number of Respondents	765
Yes	6%
No	86%
Don't know	8%

Respondents were asked whether they changed the setting since the provider visit. Less than one percent of the respondents reported that they raised the thermostat setting since the provider's visit, as shown in Table V-10.

Table V-10
Retention of Thermostat Setting

Have you raised the thermostat setting for your furnace (made it warmer) since the visit?	
	Delivery Method
	Direct Install
Number of Respondents	765
Yes	<1%
No	5%
Thermostat not lowered	94%

Clients were provided with a thermometer to measure the refrigerator and freezer temperature. While the direct install and most mass mailing clients received a card to measure the temperature, the workshop clients received a digital thermometer.

On-site inspections of service delivery found that many clients did not recall receiving a thermometer. The survey asked whether they received this device. Table V-11 shows that while 72 percent of the workshop group said that they received a thermometer, 67 percent of the mass mailing group, and 48 percent of the direct install group reported that they received it.³ Tables V-12 and V-13 that follow show that these frequencies varied further depending on the service or kit provider.

Table V-11
Receipt of Thermometer to Measure Temperature in Refrigerator

Did you receive a thermometer to measure the temperature in your refrigerator and freezer?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	331
Yes	48%	72%	67%
No	50%	23%	28%
Don't know	2%	6%	5%

As with the water temperature thermometer, there was great variance in the percentage of clients served by different providers who recalled that they received a refrigerator/freezer thermometer. Again, CRR recipients were most likely to recall receipt of the thermometer and WCCC recipients were least likely to recall receipt. More than 60 percent of respondents who received services from CRR, SWCC, and CYYCL reported that they received a thermometer to measure the temperature in the refrigerator and freezer, while 41 percent of respondents who received

³ Niagara customers are not included because the Niagara kit did not include a refrigerator/freezer thermometer or temperature card.

services from MHYC and only eight percent of respondents who received services from WCCC reported that they received one, as shown in Table V-12.

Table V-12
Receipt of Thermometer to Measure Temperature in Refrigerator
By Direct Install Service Provider

Did you receive a thermometer to measure the temperature in your refrigerator and freezer?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	41%	62%	67%	8%	77%
No	57%	36%	30%	91%	20%
Don't know	2%	2%	3%	1%	3%

There was also variability in the percent of respondents who recalled receipt of the thermometer by provider of the mass mailing. RAP provided a digital thermometer rather than a card, and 78 percent of these respondents recalled that they received the thermometer. However, only 65 percent of respondents who received a kit from MHYC reported that they received one.

Table V-13
Receipt of Thermometer to Measure Temperature in Refrigerator
By Mass Mailing Kit Provider

Did you receive a thermometer to measure the temperature in your refrigerator and freezer?		
	Mass Mailing Kit Provider	
	MHYC	RAP
Number of Respondents	110	221
Yes	65%	78%
No	31%	17%
Don't know	5%	5%

Respondents were asked whether they understand how to use the thermometer. Table V-14 shows that 44 percent of respondents in the direct install group, 65 percent in the workshop group, and 61 percent in the mass mailing group reported that they received a refrigerator/freezer thermometer and understand how to use it. Over 90 percent of the respondents who reported that they received the thermometers reported that they understand how to use it.

Table V-14
Understanding of Thermometer to Measure Temperature in Refrigerator

Do you understand how to use it?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	331
Yes	44%	65%	61%
No	3%	7%	6%
Don't know	1%	0%	0%
Thermometer not received	52%	28%	33%

Respondents were asked whether they have used the refrigerator/freezer thermometer. Twenty-eight percent of the respondents in the direct install group, 50 percent in the workshop group, and 46 percent in the mass mailing group reported that they used the thermometer to measure the temperature in their refrigerator or freezer, as shown in Table V-15.

Table V-15
Use of Thermometer to Measure Temperature in Refrigerator

Have you used the thermometer to measure the temperature in your refrigerator or freezer since the visit? Have you used the thermometer to measure the temperature in your refrigerator or freezer?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	331
Yes	28%	50%	46%
No	19%	22%	21%
Thermometer not received	52%	28%	33%

Direct install clients were asked if the provider changed the temperature settings for their refrigerator or freezer and kit recipients were asked if they changed the temperature settings for their refrigerator or freezer. Table V-16 shows that respondents in the workshop group more frequently reported that they changed the temperature settings than clients in the direct install and mass mailing groups. Forty-three percent of respondents in the workshop group reported that they had changed the temperature settings compared to 22 percent of the respondents in the direct install group who reported that the provider changed the temperature and 28 percent in the mass mailing group who reported that they changed the temperature.

Table V-16
Change in Temperature Setting for Refrigerator

Did the provider change the temperature settings for your refrigerator or freezer? Have you changed the temperature settings for your refrigerator or freezer?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	331
Yes	22%	43%	28%
No	72%	56%	72%
Don't know	6%	0%	1%
Refused	0%	1%	0%

There were differences in the percent of respondents who reported a refrigerator or freezer temperature change by service delivery provider. While more than 20 percent of respondents who received services from MHYC, CYYCL, and CRR reported that the providers changed the temperature settings for the refrigerator or freezer, ten percent of respondents who received services from SWCC and five percent of those who received services from WCCC reported that a change was made.

Table V-17
Change in Temperature Setting for Refrigerator
By Direct Install Service Provider

Did the provider change the temperature settings for your refrigerator or freezer?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	28%	23%	10%	5%	23%
No	66%	72%	85%	89%	75%
Don't know	7%	5%	5%	7%	2%

There was variation in the percentage of clients who reported a temperature change by energy kit provider. Table V-18 shows that respondents who received kits provided by RAP were more likely to report that they had changed the temperature settings for their refrigerator or freezer than respondents who received kits from the other providers. While 40 percent of those who received the RAP kit reported that they had changed the refrigerator or freezer temperature, only 19 to 25 percent of respondents who received kits from MHYC and Niagara reported that they had done so.

Table V-18
Change in Temperature Setting for Refrigerator
By Mass Mailing Kit Provider

Have you changed the temperature settings for your refrigerator or freezer?				
	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRP
Number of Respondents	110	221	81	151
Yes	25%	40%	20%	19%
No	75%	59%	79%	82%
Don't know	1%	1%	1%	0%

Direct install respondents were asked whether they maintained the temperature change that was made in their refrigerator or freezer since the provider visit. Table V-19 shows that most of the respondents who reported that the temperature settings in the refrigerator or freezer had been changed during the visit maintained those settings since the visit.

Table V-19
Retention of Temperature Setting for Refrigerator

Have you changed the temperature settings for your refrigerator or freezer since the visit?	
	Delivery Method
	Direct Install
Number of Respondents	765
Yes	2%
No	20%
Don't know	0%
Settings not raised	78%

All respondents were asked if they had made any other changes to reduce their energy use as a result of the program. Table V-20 shows that workshop clients were most likely to report that they had made changes in their behavior. While 57 percent of workshop clients reported that they had made changes in their energy usage behavior, approximately one-quarter of the respondents in the direct install and mass mailing groups reported that they made additional changes. Tables V-21 and V-22 show that there was also variation within the direct install and mass mailing groups that is related to the provider.

Table V-20
Incidence of Other Energy-Saving Actions

Have you made any other changes to reduce your energy use as a result of the program?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	26%	57%	25%
No	73%	43%	74%
Don't know	1%	0%	1%

Table V-23 shows that respondents who received services from SWCC and CYYCL were most likely to report that they had made other changes to reduce their energy use as a result of the program and respondents who received services from WCCC and CRR were least likely to report that they had made changes. While 30 percent of those who received services from SWCC reported that they made other changes to their energy use as a result of the visit, only 22 percent who received services from CRR reported that they had made other changes.

Table V-21
Incidence of Other Energy-Saving Actions
By Direct Install Service Provider

Have you made any other changes to reduce your energy use as a result of the program?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	26%	29%	30%	20%	22%
No	73%	70%	69%	78%	77%
Don't know	1%	1%	2%	1%	1%

There was also variation in report of other changes made by mass mailing provider. Respondents who received kits from RAP were more likely to report that they had made other changes to reduce their energy use as a result of the program than respondents in any of the other provider groups, as shown in Table V-24. While 43 percent of respondents who received the kit from RAP reported that they made other changes to their energy use, 30 percent who received the Niagara BRP kit, 24 percent who received the Niagara direct mail kit, and 22 percent who received the MHYC kit reported that they made other changes to their energy use.

Table V-22
Incidence of Other Energy-Saving Actions
By Mass Mailing Kit Provider

Have you made any other changes to reduce your energy use as a result of the program?				
	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRP
Number of Respondents	110	221	81	151
Yes	22%	43%	24%	30%
No	77%	54%	75%	70%
Don't know	1%	3%	1%	0%

Respondents who reported that they made additional changes to reduce their energy use were then asked what other actions they had taken as a result of the program. Table V-23 lists the actions that were cited and the frequency of each response. The most common response in all groups was to turn off lights that are not being used. In general, behavioral changes (in addition to turning off lights) such as using less water and decreasing or otherwise changing their use of appliances were fairly common responses. While only a few percent of the direct install and mass mailing clients reported changes other than turning off the lights, nine percent of workshop recipients reported that they altered the setting for their air conditioner and eight percent of the workshop recipients reported that they used cold water for washing clothing.

Table V-23
Other Energy-Saving Actions Taken

What other action have you taken to reduce your energy use as a result of the program?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Turn off all lighting that is not needed or not in use	11%	37%	11%
Decreased use of appliances	3%	7%	2%
Use less water	3%	5%	3%
Weatherization / added insulation	2%	5%	2%
Alter thermostat setting for air conditioner	1%	9%	3%
Use cold water for washing clothes	1%	8%	1%
Alter thermostat setting for furnace/heat	1%	2%	2%
Unplug / get rid of unused refrigerators / freezers	0%	4%	1%
Turn off computer(s) when not being used	0%	4%	1%
Replaced toilet	2%	0%	0%
Replaced appliance(s)	2%	0%	0%
Replaced window(s) / door(s)	2%	0%	0%

What other action have you taken to reduce your energy use as a result of the program?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Bought / installed additional CFLs	1%	0%	1%
Altered appliance setting	1%	0%	0%
Other	2%	3%	4%
No action	1%	2%	1%
Don't know	0%	1%	0%
Other actions not taken	74%	43%	76%

Respondents were asked whether they set their heat at or below 68 during the day and 60 at night. Table V-24 shows 48 percent of respondents in the direct install group, 50 percent in the workshop group, and 43 percent in the mass mailing group reported that they set their thermostat at or below 68 during the day and 60 at night when they use their heat.

Table V-24
Thermostat Setting for Heat

When you use your heat, do you normally set the thermostat at or below 68 during the day and 60 at night?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	48%	50%	43%
No	50%	48%	55%
Don't know	2%	2%	3%

There were differences in the percent who said that they set the heat at this level by provider agency. Table V-25 shows that respondents who were provided service by CYYCL were most likely to state that they normally set the thermostat at or below 68 during the day and 60 at night when they use their heat and respondents who were provided service by CRR were least likely to state that they do so. While 55 percent of those who received services from CYYCL reported that they set their temperature at this level, only 30 percent who received services from CRR reported that they set their heat at this level.

Table V-25
Thermostat Setting for Heat
By Direct Install Service Provider

When you use your heat, do you normally set the thermostat at or below 68 during the day and 60 at night?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	50%	55%	42%	44%	30%
No	49%	44%	50%	53%	66%
Don't know	1%	1%	9%	3%	3%

Respondents who reported that they use the energy-saving thermostat settings for their furnace were asked if they were using these settings before receiving program services or the energy saving kit. Table V-26 shows that a larger percentage of the respondents in the workshop group made this change since receiving program services than in either of the other groups. While 27 percent of respondents in the workshop group reported that they set their heat at these energy-saving levels only after receiving service delivery, 13 percent of mass mailing recipients and 9 percent of direct install recipients reported that they made this change.

Table V-26
Effect of Program Services on Heat Setting

Did you set the heat at this level before you received program services? Did you make the change in the heat settings before receiving the energy saving kit?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	39%	23%	29%
No	9%	27%	13%
Don't know	0%	0%	1%
Thermostat not set at or below 68 during the day and 60 at night	52%	50%	57%

There was variation in the percentage of clients who reported that they changed their heating setting since receiving service delivery by direct install provider. Table V-27 shows that among the direct install service provider groups, respondents in the CYYCL provider group reported with greater frequency than those in some of the other groups that they changed their heat settings after receiving program services. While 12 percent of those who received services from CYYCL reported that they changed their settings after receiving the kit, four percent who received services from WCCC, five percent who received services from CRR, seven percent who received services from SWCC, and nine percent who received services from MHYC reported that they did so.

Table V-27
Effect of Program Services on Heat Setting
By Direct Install Service Provider

Did you make the change in the heat settings before receiving the energy saving kit?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	40%	43%	33%	40%	25%
No	9%	12%	7%	4%	5%
Don't know	0%	0%	2%	1%	0%
Thermostat not set at or below 68 during the day and 60 at night	50%	46%	58%	56%	70%

Respondents were also asked about their air conditioning settings. Between ten and 17 percent of respondents reported that they set their thermostat at or above 78 during the day and 82 at night when using their air conditioner, as shown in Table V-28. While ten percent of direct install clients reported that they set their air conditioner at this level, 16 percent of workshop recipients and 17 percent of mass mailing recipients reported that they did so. Direct install recipients were more likely to report that they do not have an air conditioner.

Table V-28
Thermostat Setting for Air Conditioner

When you use your air conditioner, do you normally set the thermostat at or above 78 during the day and 82 at night?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	10%	16%	17%
No	31%	42%	36%
Don't have an air conditioner	54%	38%	46%
Don't know	4%	5%	2%

Table V-29 shows that there were significant differences by service provider. Respondents who received program services from CRR were most likely to report that they set their thermostat at or above 78 during the day and 82 at night, but these respondents were also less likely to report that they did not have an air conditioner than those in other provider groups. Those who received services from SWCC were least likely to state that they use these air conditioner settings, but they also were most likely to report that they did not have an air conditioner.

Table V-29
Thermostat Setting for Air Conditioner
By Direct Install Service Provider

When you use your air conditioner, do you normally set the thermostat at or above 78 during the day and 82 at night?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	10%	9%	4%	9%	23%
No	33%	25%	18%	36%	44%
Don't have an air conditioner	52%	61%	71%	53%	29%
Don't know	5%	4%	6%	2%	4%
Refused	0%	1%	0%	0%	0%

Respondents who reported that they use the energy-saving thermostat settings for their air conditioner were asked if they were using these settings before receiving program services. Table V-30 shows that ten percent of mass mailing recipients, seven percent of workshop recipients, and three percent of direct install recipients reported that they had begun setting their air conditioners at these levels after receiving program services.

Table V-30
Effect of Program Services on Air Conditioner Setting

Did you set the air conditioner at this level before you received program services? Did you make the change in the air conditioner settings before receiving the energy saving kit?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	7%	9%	8%
No	3%	7%	10%
Thermostat not set at or above 78 during the day and 82 at night / Don't have an air conditioner	90%	84%	83%

There were differences in the percentage of respondents who reported that they made this change since service delivery receipt by provider agency. Table V-31 shows that respondents in the CRR service provider group were more likely to report that they changed their settings for their air conditioner after they received program services than respondents in any of the other provider groups. Seven percent of CRR recipients reported that they had made this change.

Table V-31
Effect of Program Services on Air Conditioner Setting
By Direct Install Service Provider

Did you make the change in the air conditioner settings before receiving the energy saving kit?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	6%	6%	4%	8%	16%
No	4%	2%	1%	1%	7%
Don't know	0%	1%	0%	0%	0%
Thermostat not set at or above 78 during the day and 82 at night / Don't have an air conditioner	90%	91%	96%	91%	77%

Respondents were asked whether they have unplugged or gotten rid of unused refrigerators or freezers. Table V-32 shows that nine percent of respondents in the direct install group, 16 percent in the workshop group, and 12 percent in the mass mailing group reported that they have unplugged or gotten rid of unused refrigerators or freezers.

Table V-32
Status of Unused Refrigerators and Freezers

Have you unplugged or gotten rid of any unused refrigerators or freezers?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	9%	16%	12%
No	50%	41%	42%
Don't have any unused refrigerators/freezers	40%	43%	46%

Respondents who reported that they had gotten rid of an unused refrigerator or freezer were asked if they had taken this action before receiving program services. Five percent of respondents in the direct install group, nine percent in the workshop group, and four percent in the mass mailing group reported that they had gotten rid of a refrigerator or freezer after receiving program services.

Table V-33
Effect of Program Services on the Status of Refrigerators and Freezers

Did you unplug or get rid of the unused refrigerators or freezers before you received program services? Did you unplug or get rid of the unused refrigerators or freezers before receiving the energy saving kit?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	5%	7%	8%
No	5%	9%	4%
Refrigerators or freezers not unplugged or disposed of / No unused refrigerators or freezers	91%	84%	88%

All respondents were asked if they turn off computers in their home when they are not being used. Table V-34 shows that approximately half of all respondents in the direct install and mass mailing groups and 61 percent of respondents in the workshop group reported that they turn off computers that are not being used. However, many of the respondents reported that they do not have a computer. Only 12 percent of the mass mailing respondents, nine percent of the workshop respondents, and seven percent of the direct install respondents reported that they have a computer that they do not turn off when it is not being used.

Table V-34
Turning Off Computers

Do you turn off computers in your home when they are not being used?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	50%	61%	51%
No	7%	9%	12%
Don't have a computer	43%	30%	38%
Don't know	1%	0%	0%

Respondents who reported that they turn off unused computers in their homes were asked if they did so before they received program services. Seven percent of all respondents in the direct install group, 11 percent in the workshop group, and eight percent in the mass mailing group reported that they began turning off unused computers after they received program services, as shown in Table V-35.

Table V-35
Effect of Program Services on Turning Off Computers

Were you turning off computers before you received program services? Were you turning off computers before receiving the energy saving kit?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	42%	50%	41%
No	7%	11%	8%
Don't know	0%	0%	1%
Computer not turned off / No computer	50%	39%	50%

All respondents were asked if they turn off lights that are not being used and virtually all respondents stated that they do so, as shown in Table V-36.

Table V-36
Turning Off Lights

Do you turn off lights that are not being used?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	98%	100%	100%
No	2%	0%	1%

Respondents who stated that they do turn off lights that are not being used were asked if they were turning off unused lights before receiving program services. Six percent of respondents in the direct install group, 21 percent in the workshop group, and 13 percent in the mass mailing group reported that they began taken this action after receiving program services.

Table V-37
Effect of Program Services on Turning Off Lights

Were you turning off unused lights before you received program services? Were you turning off unused lights before receiving the energy saving kit?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	92%	79%	86%
No	6%	21%	13%

Were you turning off unused lights before you received program services? Were you turning off unused lights before receiving the energy saving kit?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Unused lights not turned off	2%	0%	1%

All respondents were asked if they use cold water for washing clothes. Table V-38 shows that 68 percent of respondents in the direct install and mass mailing groups, and 87 percent in the workshop group stated that they use cold water for washing all or most of their clothes.

Table V-38
Water Temperature Selection for Laundry

Do you use cold water for washing clothes?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes, all	36%	53%	34%
Yes, most	32%	34%	34%
No	25%	13%	24%
Don't wash clothes at home	5%	0%	6%
Don't know	2%	0%	2%

There was variability in the percentage of clients who reported that they washed clothes in cold water by service provider. Table V-39 shows that respondents in the SWCC service provider group were least likely to report that they use cold water for washing their clothes. While 42 percent of SWCC clients reported that they do not use cold water for clothes washing, 28 percent of CYycl clients, 27 percent of WCC clients, 25 percent of CRR clients, and 20 percent of MHYC clients reported that they do not use cold water for clothes washing.

Table V-39
Water Temperature Selection for Laundry
By Direct Install Service Provider

Do you use cold water for washing clothes?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes, all	37%	36%	26%	39%	43%
Yes, most	38%	27%	14%	30%	30%
No	20%	28%	42%	27%	25%
Don't wash clothes at home	4%	6%	15%	4%	2%

Do you use cold water for washing clothes?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Don't know	1%	3%	4%	1%	1%

Respondents who stated that they use cold water for washing all or most of their clothes were asked if they were doing so before receiving program services. Table V-40 shows that there were significant differences by service delivery method. While 19 percent of workshop recipients reported that they began washing clothes in cold water since receiving the kit, nine percent of respondents in the direct install group, and ten percent in the mass mailing group reported that they had taken this action after receiving program services.

Table V-40
Effect of Program Services on Water Temperature Selection for Laundry

Were you using cold water for washing clothes before you received program services? Were you using cold water for washing clothes before receiving the energy saving kit?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	59%	68%	56%
No	9%	19%	10%
Don't know	0%	0%	2%
Cold water not used / Clothes not washed at home	32%	13%	32%

There were significant differences in the percentage of respondents who reported that they made this change after service delivery by service provider. Table V-41 shows that 11 percent of respondents in the MHYC direct install service provider group reported that they began using cold water for washing clothes after they received program services, while five percent of those serviced by SWCC and six percent of those served by WCCC reported that they did so.

Table V-41
**Effect of Program Services on Water Temperature Selection for Laundry
By Direct Install Service Provider**

Were you using cold water for washing clothes before you received program services?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Yes	64%	55%	35%	63%	63%
No	11%	8%	5%	6%	9%

Were you using cold water for washing clothes before you received program services?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Cold water not used / Clothes not washed at home	25%	37%	60%	32%	28%

There were also significant differences in this behavioral change by mass mailing provider. Almost one-quarter of respondents in the RAP mass mailing kit provider group reported that they began using cold water for washing clothes after receiving the energy saving kit, while 13 percent of respondents in the MHYC provider group and fewer than ten percent in the two Niagara groups reported that they made this change after receiving the energy saving kit.

Table V-42
Effect of Program Services on Water Temperature Selection for Laundry
By Mass Mailing Kit Provider

Were you using cold water for washing clothes before receiving the energy saving kit?				
	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRP
Number of Respondents	110	221	81	151
Yes	61%	50%	54%	74%
No	13%	23%	7%	6%
Don't know	0%	1%	3%	0%
Cold water not used / Clothes not washed at home	26%	26%	36%	20%

VI. Potential for Additional Energy Saving Actions

Initial implementation of the First Response program included only limited education about energy savings from temperature turndowns in the home. The survey explored whether there were other good opportunities for education as part of the First Response Program, by eliciting information from respondents about current energy use practices and willingness to make changes in their behavior. Questions in this section were asked only of respondents who had previously indicated that they had not taken these actions.

Respondents were asked how willing they were to turn their heat to a lower setting to save energy and money. Table VI-1 shows that an additional 36 to 39 percent of respondents in each group reported that they are either very willing or somewhat willing to turn down their heat at night to save energy and money. This shows that there is significant opportunity for energy savings from education about lower nighttime heat settings in this population.

Table VI-1
Willingness to Lower Heat Setting

How willing are you to turn your heat to a lower setting every night to save energy and money?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Very willing	23%	29%	17%
Somewhat willing	14%	10%	19%
Not too willing	5%	4%	9%
Not at all willing	6%	5%	10%
Don't know	1%	0%	0%
Refused	1%	0%	0%
Thermostat already set to lower setting	50%	52%	45%

Respondents were asked how willing they are to turn off their computer every night to save energy and money. Most respondents either do not have a computer or already turn off their computers every night. An additional five to eight percent are either very willing or somewhat willing to turn off their computer every night to save energy and money.

Table VI-2
Willingness to Turn Off Computer

How willing are you to turn off your computer every night to save energy and money?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Very willing	3%	5%	5%
Somewhat willing	2%	2%	3%
Not too willing	1%	1%	2%
Not at all willing	1%	1%	2%
Computer already turned off every night / No computer	93%	92%	88%

Respondents were asked how willing they are to use cold water for all of their laundry to save energy and money. Most respondents reported that they already do use cold water. Table VI-3 shows that an additional 8 to 13 percent of respondents in each group are either very or somewhat willing to use cold water for all of their laundry to save energy and money.

Table VI-3
Willingness to Use Cold Water for Laundry

How willing are you to use cold water for all of your laundry to save energy and money?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Very willing	4%	3%	1%
Somewhat willing	9%	5%	12%
Not too willing	7%	3%	7%
Not at all willing	5%	3%	4%
Don't know	1%	0%	1%
Already use cold water / Clothes not washed at home	75%	87%	76%

Respondents were asked whether they have a second refrigerator or freezer that they would be willing to get rid of if someone came and took it away for free. Eight percent of respondents in the workshop group and three percent of respondents in each of the other groups reported that they have a second refrigerator or freezer that they would be willing to get rid of if someone came and took it away for free as shown in Table VI-4.

Table VI-4
Willingness to Part with Second Refrigerator or Freezer

Do you have a second refrigerator or freezer that you would be willing to get rid of if someone came and took it away for free?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Yes	3%	8%	3%
No, don't have a second refrigerator/freezer	87%	86%	85%
No, not willing to get rid of it	11%	6%	13%

Respondents were also asked about the age of this refrigerator to get a sense of whether these refrigerators and freezers were high-energy users. Table VI-5 shows the reported age of the second refrigerator or freezer referred to in the prior question. Only about two percent of the respondents have a refrigerator or freezer older than 10 years old that they are willing to get rid of. This shows that there is not much opportunity for refrigerator or freezer removal energy savings in this population.

Table VI-5
Age of Second Refrigerator or Freezer

How old is the second refrigerator or freezer?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
0-5 years	0%	2%	0%
6-10 years	1%	2%	1%
11-15 years	1%	2%	0%
>15 years	1%	0%	0%
Don't know	1%	2%	1%
Not willing to dispose of refrigerator or freezer / No unused refrigerator or freezer	97%	92%	98%

VII. Satisfaction with Program Services

This section examines the respondents' satisfaction with the service providers and the program. The first two tables in this section include the respondents' evaluation of the service providers for the program and therefore include only the direct install and workshop groups, who interacted with providers.

Respondents were asked whether they felt the providers were knowledgeable. Table VII-1 shows that more than 95 percent of the respondents in both groups feel that the service providers were knowledgeable about energy usage. About three-quarters feel that the providers were very knowledgeable.

**Table VII-1
Providers' Level of Knowledge**

Do you feel that the providers who came to your home were very knowledgeable about energy usage, somewhat knowledgeable, or not at all knowledgeable? Do you feel that the providers at the agency were very knowledgeable about energy usage, somewhat knowledgeable, or not at all knowledgeable?		
	Delivery Method	
	Direct Install	Workshop
Number of Respondents	765	106
Very knowledgeable	74%	78%
Somewhat knowledgeable	23%	18%
Not at all knowledgeable	1%	1%
Don't know	2%	3%

Although the direct install service providers were generally considered to be knowledgeable about energy usage, the frequency with which the different service providers were rated as very knowledgeable varied, as shown in Table VII-2. Respondents whose services were provided by CRR were more likely to state that the providers were very knowledgeable and those whose services were provided by CYYCL and WCCC were least likely among the five groups to state that the providers were very knowledgeable. While 83 percent of those who received services from CRR stated that the service providers were very knowledgeable, 66 percent of those who received services from WCCC and 69 percent of those who received services from CYYCL reported that the service providers were very knowledgeable.

Table VII-2
Providers' Level of Knowledge
By Direct Install Service Provider

Do you feel that the providers who came to your home were very knowledgeable about energy usage, somewhat knowledgeable, or not at all knowledgeable?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Very knowledgeable	76%	69%	75%	66%	83%
Somewhat knowledgeable	22%	29%	22%	25%	13%
Not at all knowledgeable	0%	1%	0%	5%	0%
Don't know	2%	1%	4%	4%	4%

Respondents were asked how courteous and professional the service providers were. The service providers were judged to be very courteous and professional by 92 percent of the respondents in both the direct install and workshop groups, as shown in Table VII-3.

Table VII-3
Providers' Level of Courtesy and Professionalism

How courteous and professional were the providers?		
	Delivery Method	
	Direct Install	Workshop
Number of Respondents	765	106
Very courteous and professional	92%	92%
Somewhat courteous and professional	7%	7%
Not at all courteous and professional	1%	0%
Don't know	0%	2%

Respondents were also asked how helpful the Program was in teaching them about energy use and ways to reduce energy costs. Respondents in the workshop group were most likely to report that the Program was very helpful. The First Response Program was deemed to be very helpful by 81 percent in the workshop group, 64 percent of respondents in the direct install group, and 53 percent in the mass mailing group. Overall, the program was judged to be very or somewhat helpful to at least 82 percent of the respondents in each of the groups.

Table VII-4
Helpfulness of the Program

How helpful was the First Response Program in teaching you about energy use and ways to reduce energy costs?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Very helpful	64%	81%	53%
Somewhat helpful	29%	14%	29%
Of little help	5%	3%	9%
Not at all helpful	1%	0%	4%
Don't know	1%	2%	5%

There was variability in the ratings of the helpfulness of the Program by service delivery providers. While 48 percent of respondents in the WCCC provider group rated the program as being very helpful at least 60 percent of respondents in each of the other service provider groups rated it as very helpful.

Table VII-5
Helpfulness of the Program
By Direct Install Service Provider

How helpful was the First Response Program in teaching you about energy use and ways to reduce energy costs?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Very helpful	68%	63%	60%	48%	67%
Somewhat helpful	28%	27%	25%	37%	28%
Of little help	3%	7%	10%	10%	4%
Not at all helpful	0%	2%	2%	4%	0%
Don't know	1%	1%	3%	1%	1%

Respondents were asked about changes in their energy bills since receipt of Program services. Table VII-6 shows that slightly more than half of respondents in the direct install and workshop groups reported that they have lower energy bills since receiving program services, while 39 percent of respondents in the mass mailing group reported that they have lower energy bills. As many of the respondents in the mass mailing group saw no change in their energy bills as those who reported a decrease.

Tables VII-7 and VII-8 that follow show that there also were differences in the responses that correlate with the service or kit provider.

Table VII-6
Comparison of Energy Bills Before and After Service Delivery

Would you say that your energy bills are higher, lower, or have not changed in comparison to what they were before receiving the First Response Program Services?			
	Delivery Method		
	Direct Install	Workshop	Mass Mailing
Number of Respondents	765	106	563
Higher	6%	4%	3%
Lower	53%	51%	39%
No change	26%	27%	41%
Don't know	14%	18%	18%

Table VII-7 shows that there was variability in the percentage of respondents who said that their energy bills were lower since receipt of service delivery by provider. Respondents who received services from WCCC and CRR were less likely to report that their energy bills were lower after receiving program services than were the respondents in each of the other service provider groups. While 40 percent of CRR respondents and 44 percent of WCCC respondents reported that their bills were lower, 52 percent of SWCC respondents, 55 percent of CYYCL respondents, and 58 percent of MHYC respondents reported that their bills were lower.

Table VII-7
Comparison of Energy Bills Before and After Service Delivery
By Direct Install Service Provider

Would you say that your energy bills are higher, lower, or have not changed in comparison to what they were before receiving the First Response Program Services?					
	Direct Install Service Provider				
	MHYC	CYYCL	SWCC	WCCC	CRR
Number of Respondents	246	143	115	139	122
Higher	6%	6%	7%	4%	7%
Lower	58%	55%	52%	44%	40%
No change	23%	27%	30%	32%	31%
Don't know	13%	13%	11%	19%	22%

There was also variability in the percentage of respondents who reported that their bills were lower since Program services were received by mass mailing kit provider. Table VII-8 shows that respondents who received a kit from MHYC were least likely to state that their energy bills were lower after receiving a kit. While 49 percent of Niagara business reply card kit recipients and 48 percent of RAP kit recipients reported that their bills were lower, 40 percent of Niagara direct mail kit recipients and 32 percent of MHYC kit recipients reported that their bills were lower.

Table VII-8
Comparison of Energy Bills Before and After Service Delivery
By Mass Mailing Kit Provider

Would you say that your energy bills are higher, lower, or have not changed in comparison to what they were before receiving the First Response Program Services?				
	Mass Mailing Kit Provider			
	MHYC	RAP	Niagara	Niagara BRP
Number of Respondents	110	221	81	151
Higher	1%	5%	4%	4%
Lower	32%	48%	40%	49%
No change	50%	34%	38%	31%
Don't know	17%	12%	19%	16%
Refused	0%	1%	0%	0%

VII. Summary of Findings and Recommendations

This section summarizes the findings and recommendations that are based on the client survey.

A. Findings

1. Respondent reports on CFLs and efficient showerheads installed roughly match provider reports.

Providers reported an average of 13 CFLs installed through the direct install approach, 2 through the workshop approach and 4 through mass mailing. Respondents reported an average of 10 CFLs installed by providers, 2 received at the workshop, and 2 received in the mass mailed energy kit.

Providers reported that an average of .7 efficient showerheads were installed per home. Respondents reported that an average of .66 efficient showerheads were installed per home. Forty-six percent of the workshop respondents and 36 percent of the direct mail respondents reported that they installed the showerheads.

2. Most of the installed measures appear to be retained.

Direct install respondents reported that an average of nine CFLs were still in place, and workshop and mass mailing clients reported that 3 CFLs were still in place. (Note: workshop respondents could request up to eight additional CFLs after service delivery.)

Direct install respondents reported that an average of .55 showerheads were still in place at the time of the survey. Forty-four percent of workshop recipients and 31 percent of direct install recipients reported that the showerheads were still in place at the time of service delivery.

3. Direct install delivery resulted in the greatest numbers of measures installed and workshop delivery resulted in the greatest changes in energy usage behavior.

The initial program design for the First Response program planned for a comparison of the cost-effectiveness of the three different delivery methods – direct install, workshop, and mass mailing. While the billing analysis impact results will provide the final answer on how the different methods compare, the survey results provide some preliminary information on the effectiveness of the three methods. Key findings from the survey were:

- Direct install respondents had greater frequency of measure installation, retention and use.

- Workshop respondents were most likely to recall receipt of thermometers and report that they changed their hot water and refrigerator/freezer settings after receipt of program services.
- Workshop respondents were most likely to report that they made other changes in energy use after receipt of program services.
- Direct install and workshop respondents were more likely than mass mailing respondents to report that their energy bills were lower after receipt of program services.

4. There were significant differences in measure installation and energy saving behavioral changes by direct install provider.

MHYC was the most effective direct install provider and WCCC was the least effective provider. Key findings from the survey were:

- While there were some large differences in the average number of CFLs installed by different direct install providers, as shown in provider reports, survey results show smaller differences between providers in the number of CFLs recalled by participants, and in the number of CFLs that are used more than 30 minutes and more than 4 hours each day.
- MHYC provider and respondent reports were most likely to show that the showerhead was replaced and still in use, and CRR provider reports were least likely to show that the showerhead was replaced and still in use.
- MHYC respondents were most likely to report that the provider changed their hot water temperature and WCCC respondents were least likely to report that the provider changed their hot water temperature.
- CRR respondents were most likely to recall receipt of the hot water thermometer and report that they had used it and WCCC respondents were least likely to recall receipt of the hot water thermometer and report that they had used it.
- MHYC respondents were most likely to report that the provider changed their refrigerator or freezer temperature and WCCC respondents were least likely to report that the provider changed their refrigerator or freezer temperature.
- CRR and SWCC respondents were most likely to recall receipt of the refrigerator/freezer thermometer and report that they had used it and WCCC respondents were least likely to recall receipt of the refrigerator/freezer thermometer and report that they had used it.

- SWCC, CYYCL, and MHYC respondents were most likely to report that they made other changes in energy use behavior after receiving service delivery and WCCC and CRR respondents were least likely to report that they made other changes.
- MHYC respondents were most likely to report that the program was very helpful in teaching about energy use and ways to reduce energy costs and to report that their energy bills are lower, and WCCC respondents were least likely to report this.

5. There were large differences in the effectiveness of the mass mailing providers.

MHYC was a more effective provider for direct mass mailing than Niagara and RAP was a more effective provider for BRP mass mailing than Niagara.

- Within the pure direct mail providers, MHYC respondents were more likely than the Niagara pure direct mail respondents to report that they installed and retained the showerhead.
- MHYC respondents were more likely than the Niagara pure direct mail respondents to report that they received and used the water temperature thermometer.
- RAP respondents were more likely than the other respondents to report that they made other changes in their energy use behavior since receiving the energy kit.

6. The BRP approach was more effective than the pure direct mail approach.

Some of the key differences from the survey that support this finding were:

- Clients who respond to the business reply card to request a kit are more likely to install the showerheads, as Niagara BRC clients were more likely to install and retain the showerheads than Niagara direct mass mailing clients.
- Niagara BRC clients were more likely to recall receipt and report that they used the water temperature thermometer than Niagara direct mass mailing clients.
- The business replay card clients were more likely than the direct mail clients to report that their energy bills are lower since receipt of service delivery.

7. All three delivery methods appear to be cost-effective.

Based on measure retention and behavior change estimates from the survey and initial program assumptions about savings, we calculated the following program savings:

- The direct install savings were estimated to be 440 kWh and 9 Therms for a net present value of \$251 in savings. (Note: estimated savings from measures alone was \$208.) The average cost for service delivery was \$228.

- The workshop savings were estimated to be 232 kWh and 32 therms for a net present value of \$201 in savings. (Note: the total savings from measures alone was \$96.) The average cost for service delivery was \$121.
- The mass mailing savings were estimated to be 197 kWh and 16 therms for a net present value of \$140 in savings. (Note: the total savings estimate for measures alone was \$84.) The average cost for service delivery ranged from \$21 to \$43.

B. Recommendations

Based on the survey results, we make the following recommendations for service delivery.

1. Use the business reply card approach for all mass mailing.

The business reply card approach results in greater rates of measure installation and retention and in energy savings actions taken because clients who respond to the mailing are more likely to take action. Therefore, this method is more effective and results in less waste.

2. Expand the education aspect of direct install service delivery.

The direct install clients were less likely than the workshop clients to report that they have taken actions to reduce their energy use. Now that the youth corps have experience with the program, they should work to improve the education component.

3. Have MHYC provide additional training to WCCC.

There were some clear differences between the responses of clients served by different youth corps. MHYC appeared to be the most effective and WCCC appeared to be the least effective. As the lead contractor, MHYC should provide additional training to WCCC.

4. Improve the education part of the mass mailing kit for MHYC and Niagara.

The RAP energy kit contained a clear and user friendly education piece and clients who received this kit were more likely to make some changes in their energy usage behavior. The other mass mailing kit providers should improve the client education materials that are contained in their kits.