

**EVALUATION, VERIFICATION,
AND MEASUREMENT PLAN**

FY 2008 PROGRAM

For Merced Irrigation District

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1 INTRODUCTION

Two legislative bills (SB1037 and AB2021) that affect energy efficiency programs offered through Publically Owned Utilities (POUs) were signed into law a year apart. SB1037 requires that the POUs, similar to the Investor Owned Utilities (IOUs), place cost effective, reliable, and feasible energy efficiency and demand reduction resources at the top of the loading order. Additionally, SB1037 (signed September 29, 2005) requires an annual report that describes the programs, expenditures, expected energy savings, and actual energy savings.

Assembly Bill 2021, signed by the Governor a year later (September 29, 2006), reiterated the loading order and annual report stated in SB1037 as well as expanding on the annual report requirements. The expanded report must include investment funding, cost-effectiveness methodologies, and an independent evaluation that measures and verifies the energy efficiency savings and reductions in energy demand achieved by the energy efficiency and demand reduction programs. AB2021 additionally requires a report every three years that highlights cost-effective electrical and natural gas potential savings from energy efficiency and established annual targets for energy efficiency and demand reduction over 10 years.

The legislative reports require both an on-going assessment of what is occurring within the programs, along with a comparison of how much possible savings are left within the POU service territory. The goal of this energy efficiency program evaluation plan is to assist Merced Irrigation District (MID) to meet these requirements.

1.1 General Utility Background Information

MID is an irrigation district that became a legal entity in 1919 and built its first dam in the 1920's. MID has been in the business of generating wholesale power since this date, selling power to PG&E under a long-term contract. In the late 1990's, MID created the Electric Services Department and developed its own electric delivery system with Foster Farms as its first customer. About 85% of MID's electricity sales are to its non-residential customers.

1.2 Efficiency Programs Offered

MID offers a variety of energy efficiency programs to encourage its members to reduce energy consumption. These programs include a combination of informational home energy self-audits and rebates as a way to help increase member awareness of energy efficiency and encourage the wise use of electricity.

1.2.1 Residential Program Summaries

MID offers home energy self-audits to customers who would like to learn how to reduce their energy use and offers a number of rebates. These rebate offers cover:

- Ceiling fans
- Whole house fan
- Central air conditioner
- Energy star dishwashers
- Energy star clothes washer

- Energy star refrigerators
- Electric water heater
- Refrigerator recycling
- CFLs

1.2.2 Non-residential Program Summaries

MID provides non-residential efficiency measure assistance through four general program initiatives.

- **Commercial/Industrial Lighting Program** - The Commercial Lighting Program is a turnkey lighting retrofit rebate program with a financial rebate menu for energy saving lighting equipment retrofits. The menu includes generous rebates for the replacement of T-12 lamps, Metal Halide Fixtures, Incandescent Lighting, and Exit Signs. The program also provides rebates for the addition of lighting controls including Photocells and Occupancy Sensors.
- **Commercial/Industrial Mechanical Equipment Retrofit Program** - The Commercial/Industrial Retrofit Program is a turnkey mechanical equipment rebate program with a financial rebate menu for energy saving mechanical equipment retrofits. The menu includes generous rebates for the replacement of mechanical equipment with more energy efficient equipment including: Refrigeration Equipment, Air Conditioning Equipment, Chillers, Motors and Pumps. The program also provides rebates for Variable Frequency Drives on pumps, motors and fans. Rebates are also available for Cooling Load Reduction measures to include Duct Sealing, Cool Roofs, Window Film and Programmable Thermostats.
- **Customized Commercial/Industrial Retrofit Program** - The Customized Commercial/Industrial Retrofit Program is program that enables qualifying commercial and industrial customers to apply for financial incentives on more specialized and comprehensive energy saving measures that do not fall under the Commercial Lighting Program or the Mechanical Equipment Retrofit Program. Applications for this program are evaluated and approved on an individual per application basis. Financial incentives for qualifying customer projects will be paid for annual kilowatt-hour savings in a one year period on approved projects.
- **Commercial New Construction Rebate Program** - MID's New construction Program is available to businesses building new facilities in Merced Irrigation District-Electric Services territory. Rebates are available for projects estimated to exceed a Title-24 or standard practice baseline by at least 10% on a whole building performance basis. The maximum rebate is \$150,000 per year, per customer and will not exceed 60% of the project's cost (equipment plus labor).

1.2.3 2008 Program Summary

In fiscal year 2008, MID spent a total of \$437,549 in program costs that led to total reported demand reductions of 262 peak demand kW and total reported annual energy reductions of 1,870,992 net kWh. Table 1 summarizes the kW, kWh and program costs for MID's 2008 programs.

Table 1: 2008 Summary of MID's Programs

| | | Impact Summary | | | Cost Summary | | |
|------------------------------|---------------------|-------------------------|---------------------|------------------------|------------------------------|---|-------------------------|
| Program Sector | Category | Net Demand Savings (kW) | Net Peak kW Savings | Net Annual kWh Savings | Utility Incentives Cost (\$) | Utility Mktg, EM&V, and Admin Cost (\$) | Total Utility Cost (\$) |
| Residential | | | | | | | |
| Appliances | Res Clothes Washers | 5 | 5 | 13,042 | \$4,275 | \$1,178 | \$5,453 |
| HVAC | Res Cooling | 48 | 49 | 166,779 | \$39,770 | \$75,681 | \$115,451 |
| Appliances | Res Dishwashers | | | 1,094 | \$1,425 | \$130 | \$1,555 |
| Lighting | Res Lighting | 1,486 | 206 | 1,116,115 | \$94,470 | \$80,239 | \$174,709 |
| Refrigeration | Res Refrigeration | 1 | 1 | 4,867 | \$6,500 | \$781 | \$7,281 |
| Residential Total | | 1,540 | 262 | 1,301,897 | \$146,440 | \$158,009 | \$304,449 |
| Non-Residential | | | | | | | |
| Lighting | Non-Res Lighting | 7 | | 195,664 | \$25,777 | \$27,363 | \$53,139 |
| Process | Non-Res Motors | 5 | | 9,152 | \$1,430 | \$1,147 | \$2,577 |
| Other | Other | 82 | | 364,279 | \$31,874 | \$45,509 | \$77,383 |
| Non Residential Total | | 94 | | 569,095 | \$59,081 | \$74,019 | \$133,100 |
| Total | | 1,635 | 262 | 1,870,992 | \$205,521 | \$232,028 | \$437,549 |

1.3 Evaluation Priorities

As shown in Table 1, about 70% of MID's energy savings accrues from its residential programs and about 30% from its non-residential programs. CFLs account for over 85% of the residential savings while the categories of "Other" and "Lighting" provide the bulk of the non-residential savings. Each of these three categories are high evaluation priorities.

2 IMPACT EVALUATION PLAN

The objectives of an impact analysis are to assess gross and net demand and energy savings and the cost-effectiveness of the installed equipment. An impact evaluation verifies measure installations, identifies key energy assumptions, and provides the research necessary to calculate defensible and accurate savings attributable to the program.

2.1 Impact Evaluation Research Issues and Objectives

The primary objectives of the impact analysis are:

1. Review engineering assumptions.
2. Develop an analysis approach designed to minimize uncertainty of reported savings.
3. Verify measure installations.
4. Calculate verified gross demand and energy savings.
5. Calculate net-to-gross factors and verified net demand and energy savings.

2.2 Methods and Data Sources

A useful construct for thinking about the range of efficiency measures covered by the MID Program is the International Performance Measurement and Verification Protocol (IPMVP). Table 2 presents a listing of the IPMVP protocols, the nature of the performance characteristics of the measures to which M&V options typically apply, and an overview of the data requirements to support each option. Our approach to selecting M&V strategies follows these guidelines.

Table 2: Overview of M&V Options

| IPMVP M&V Option | Measure Performance Characteristics | Data Requirements |
|--|-------------------------------------|--|
| Option A: Engineering calculations using spot or short-term measurements, and/or historical data | Constant performance | <ul style="list-style-type: none"> • Verified installation • Nameplate or stipulated performance parameters • Spot measurements • Run-time hour measurements |
| Option B: Engineering calculations using metered data. | Constant or variable performance | <ul style="list-style-type: none"> • Verified installation • Nameplate or stipulated performance parameters • End-use metered data |
| Option C: Analysis of utility meter (or sub-meter) data using techniques from simple comparison to multi-variate regression analysis. | Variable performance | <ul style="list-style-type: none"> • Verified installation • Utility metered or end-use metered data • Engineering estimate of savings input to SAE model |
| Option D: Calibrated energy simulation/modeling; calibrated with hourly or monthly utility billing data and/or end-use metering | Variable performance | <ul style="list-style-type: none"> • Verified installation • Spot measurements, run-time hour monitoring, and/or end-use metering to prepare inputs to models • Utility billing records, end-use metering, or other indices to calibrate models |

The residential CFL give-away program provides the greatest amount of claimed energy savings with 85% of the residential sector savings and 60% of all claimed energy savings. The savings per measure are based on “deemed” energy savings and thus, fulfill the requirements of Option A regarding savings per measure. However, two additional issues need to be addressed regarding this measure. These two issues are:

- Verifying that the measures have actually been installed and,
- Estimating the program net to gross ratio.

Both of these variables have significant impact on the savings estimates and the CFL give-away program has high levels of uncertainty regarding these values. The recommended approach for estimating these two variables is a short customer telephone survey. About a dozen questions would be needed within such a survey, which should take only about 10-15 minutes to complete. Appendix A provides a suggested survey instrument for this effort.

There are about 6,000 homes in the MID service territory and program records indicate that over 30,000 CFLs have been given away. The recommended survey approach is to draw a random sample from the entire population of residential accounts in MID. To achieve results that are statistically significant at a 90% confidence level, +/- 10% would be about 70 completed surveys. An added bonus to performing this survey is that it would provide valuable input for current levels of CFL densities and a defensible net to gross ratio to be used in CalEERAM, the DSM potentials model being used to develop MID’s energy efficiency program targets for the next three years.

The next priority for evaluation are participants in MID’s non-residential programs. Currently, the number of participants are small, but it is expected that their contribution to future energy conservation achievements will be growing given that 85% of MID’s sales are to the non-residential sector.

The engineering calculations used to estimate the non-residential savings depend upon the type of measure being implemented. Therefore, our recommendation is that a combination of M&V Options “A” and “B” is the most appropriate method for this impact evaluation. In the case of measures for which a significant portion of facility usage is affected, Option “C” may be appropriate, although the provided data does not show any projects for which this is likely to be the case.

The majority of recent program savings consist of lighting and compressed air, with HVAC and refrigeration making up much smaller shares. Of these, lighting measures rarely require metering since the usage of these systems is well documented, although verification of controls using run-time measurements may be useful in some cases. Compressed air measures differ greatly for each installation and metering is usually necessary in order to accurately determine savings. Many complicated refrigeration and HVAC measures also require metering or use of facility logged data to determine savings. However since both of this program’s measures of this type are prescriptive and small in scope, metering is unlikely to be necessary. In many cases where metering is appropriate, pre-installation metering can be used if conditions have not changed. However, in cases where the demands on a system have been affected by the installed measures, or where the installation is completely new, post-installation metering may also be called for. Easily accessible data from the program database, such as system horsepower or tonnage, number and type of lights, and system control specifications will be used as inputs for engineering calculations.

2.3 Task 1: Finalize Residential CFL Survey and Draw Phone Survey Sample

As stated in Section 2.2, the residential CFL give-away program provides the greatest amount of claimed energy savings for MID with 85% of the residential sector savings and 60% of all claimed energy savings. The focus of the impact evaluation for this measure is not to test or review the estimated savings per measure because these estimates are deemed. Rather, the focus is on determining measure installation and the program net-to-gross estimate. Also to be gathered are estimates of CFL saturation, which can be used to estimate remaining energy efficiency potential from this measure.

It is suggested that the survey be very short so as to maximize participation. About a dozen questions should be needed and a first draft sample of the survey instrument is provided in Appendix A. With feedback from MID staff, the survey instrument will be finalized.

There are about 6,000 homes are in the MID service. The recommended survey approach is to draw a random sample from the entire population of residential accounts. To achieve results that are statistically significant at a 90% confidence level, +/- 10%, about 70 completed surveys are needed. MID will provide to Summit Blue a listing of all residential accounts with contact information. Summit Blue will then select its random sample from this population.

2.4 Task 2: Perform Residential CFL Telephone Survey

Once the sample draw is complete and the survey instrument finalized, Summit Blue will conduct the telephone survey. For each account sampled, three attempts at different hours of the day will be tried to complete the survey. If after three attempts there is no complete, then this sampled account will be replaced by the next account within the replacement sample.

Results from the survey will be compiled in a Excel spreadsheet and analysis performed using statistical tools within Excel. Results of the analysis will be included in the final report.

2.5 Task 3: Identify Impact Evaluation Sample for Non-Residential Projects

As discussed in Section 2.2, it is our recommendation that using engineering calculations with a combination of metered data and stipulated performance parameters is the best evaluation strategy for MID’s non-residential projects.

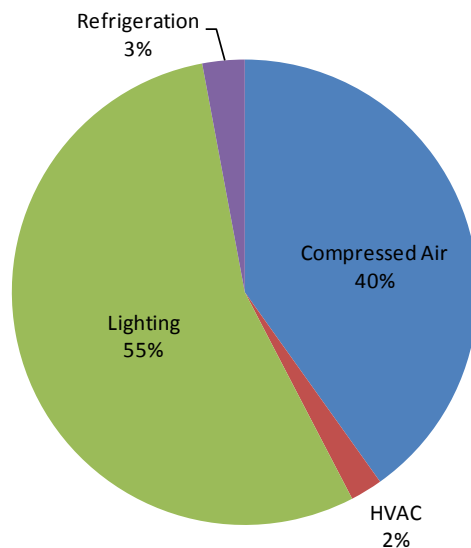
MID provided Summit Blue data from seven recently completed non-residential projects. In these seven projects, there were eight measures installed. The program data supplied to Summit Blue by MID did not include energy and demand savings values for many of the prescriptive measures so rebate amounts have been used to estimate the relative impacts of measures. The actual applications for each project would be needed in order to perform the actual measure verification and savings analysis. Table 3 and Figure 1 show the breakdown of the eight measures by measure type.

Table 3: Overview of Measures from the Seven Projects

| measure type | # of measures | % of measures | rebate | % of rebate |
|----------------|---------------|---------------|--------------------|-------------|
| Compressed Air | 1 | 12.5 | \$32,304.00 | 40.1 |
| HVAC | 1 | 12.5 | \$1,800.00 | 2.2 |
| Lighting | 5 | 62.5 | \$44,018.40 | 54.7 |
| Refrigeration | 1 | 12.5 | \$2,360.00 | 2.9 |
| total | 8 | 100 | \$80,482.40 | 100* |

*Values shown may not add up to exactly 100% due to rounding.

Figure 1: Overview of Rebate Amount by Measure Type for the Seven Projects



To keep costs reasonable, it is recommended that a sample population be drawn from the universe of installations sufficient to achieve a level of precision and confidence of 80% +/-20%. Using a universe of eight installations, a sample of five measures would be included in the regression analysis. Because of the variability among types of measures, it is recommended that the samples be representative of the program measure type distribution. It is also important that the projects providing the greatest share of savings be included in the sample. Since two measures, the compressed air and one of the lighting projects, account of almost 80% of the issued incentives, both of these would be included. Table 4 provides an overview of the proposed sample.

Table 4: Proposed Sample

| measure type | # of measures | rebate amount | % of total rebate |
|----------------|---------------|-----------------|-------------------|
| Compressed Air | 1 | \$32,304 | 5.3 |
| HVAC | 0 | - | 0 |
| Lighting | 3 | \$41,822 | 11.4 |
| Refrigeration | 1 | \$23,60 | 37.6 |
| total | 5 | \$76,486 | 95 |

2.5.1 Compressed Air

Verification of compressed air measures generally requires a combination of spot measurements, metering, and equipment specifications as in the IPMVP Options A and B approaches. Typically onsite spot measurements of power consumption are combined with logging of power or current draw for between one and three weeks. If the facility tracks air usage or compressor operation, these data logs can be used in conjunction with logged data to determine system power requirements. Air usage can also be estimated from power consumption using compressor specifications. If logged data is available for the baseline system prior to the project installation, this can be compared to current usage if the system loads have not significantly changed. Otherwise the usage baseline can be calculated using compressor specifications for the old system based on current loading data.

The specific compressed air project included in the sample installed a new 100 horsepower rotary screw compressor, cycling refrigerated dryer, and 1,060 gallon receiver as part of a larger compressed air system. Since this project accounted for 40% of the rebates issued by the program, it would be expected to be included as part of any evaluation sample. Details of the control strategy were not included in the available project summary, so additional operational details would be collected during a site visit. All of the compressors and dryers in the system would be logged for power consumption over a one to three week period.

2.5.2 HVAC

HVAC measure verification can include multi-week logging of operation that is correlated with outdoor air temperatures and TMY data. However, for prescriptive replacements of AC units such as those included in the MID program, typically the IPMVP Option A approach is employed. A simple onsite inspection may be performed to confirm proper system operation, often including spot measurements of power consumption. This is used along with system specifications, Title 24 baselines, and operational hours to determine savings. These values can be compared to the deemed savings to determine if they are greater than the standard values. Since the only HVAC project in the MID program accounted for only

2.2% of the total rebates issued, and it was an entirely prescriptive project, it has not been included in the proposed evaluation sample.

2.5.3 Lighting

Verification of lighting measures typically involves the IPMVP Option A method. If projects chosen for the sample do not involve any occupancy sensors or dimming controls, a simple count and calculation based on rated wattages will be used for verification. In order to accurately evaluate a typical lighting installation, all that is needed is a list of fixtures removed, fixtures installed, and operational hours. Standard wattages are available for most fixtures and can be used in a straightforward calculation of savings. If occupancy sensors are included in the project, standard usage reductions for the space type may be used to estimate savings. If there is reason to believe savings from sensors may be substantially higher than these standard values, lighting loggers can be employed over a period of three weeks to determine actual savings.

2.5.4 Refrigeration

Refrigeration measures often have a highly variable load structure. At least three weeks of logging post-installation is generally advisable for complicated measures since they can be affected by weather conditions, although estimates using pre-installation logging along with system specifications can also be reasonably accurate in some cases. If the savings represent a significant portion of facility total usage, billing analysis may be used to verify savings. In the case of prescriptive measures, typically a simpler approach is taken and deemed or rated usage values are combined with operational data to estimate savings.

The only refrigeration project included in the sample consists of gaskets and strip curtains, which received a prescriptive rebate accounting for 2.9% of incentives issued. Since this measure accounts for only a small portion of savings and deemed savings values are available, an onsite visit would be used primarily to verify the continued use of the installed items.

2.6 Task 4: Non-Residential On-Site Visits and Installation Verification

The installation of each measure has already been verified by MID before the incentive was issued. The evaluation consultant will insure that this verification information is included in the MID program tracking database. Therefore, an on-site verification is only deemed necessary when it is in conjunction with post-installation metering, lighting counts, or to verify continued operation, as described above. If post-installation metering has already been performed, the significant change in kWh usage for the affected equipment will confirm the installation. If the analysis indicates a problem, then the evaluation team will discuss the project with facility personnel to determine the reason for the lack of the expected energy savings. This on-site verification should be made by an independent party, either a member of the evaluation team or an independent evaluator secured by the evaluation team.

2.7 Task 5: Calculate Gross Non-Residential Energy and Demand Impacts

The engineering analysis normalized to predicted kWh and kW savings will be used to estimate the impact from each installation. A weighting factor will be used to normalize the results to the full participant population.

2.8 Task 6: Impact Evaluation Report

The evaluation consultant will issue a final report to the utility summarizing the results from the residential and non-residential impact evaluations. The report will include any recommendations that come from the evaluations. This report will assist the Merced Irrigation District in meeting the requirements with the AB2021 requirements and can be submitted by them to the California Energy Commission (CEC).

3 PROCESS EVALUATION

As part of the development of this Impact Evaluation Plan, the Summit Blue Team completed a brief process evaluation. In the fall of 2009, Summit Blue staff interviewed energy efficiency program staff regarding their perceptions of program implementation and program offerings.

According to the program manager, the residential programs appear to be well tracked and there are good levels of customer participation. This is borne out by the high level of claimed residential sector energy savings, which in 2008 was a high 2% of residential sales. By comparison, most utilities in California achieve 1% or less of sales in this sector.

In contrast, the program manager believed that their commercial programs are under-subscribed. This too is borne out by the low level of claimed non-residential sector energy savings when expressed as a percent of sector sales. Most California utilities achieve savings levels of about 0.5% to 1% of sector sales but MID achieved less than 0.1% of non-residential sector sales.

3.1 Residential Programs

MID has had success with its residential programs in terms of attracting participants, especially with programs such as the CFL Giveaway and the Shade Tree Program. However, it is unlikely that high levels of participation will continue for its most successful program, the CFL give-away program. Over 30,000 CFLs were given away in FY 2008 even though there are only about 6,000 households within MID. Good success has also accrued from the residential shade tree program and appliance programs and continued success is expected within these programs. Some improvement could come from the Central A/C program and other HVAC related efforts.

3.2 Commercial Programs

In FY 2006 and FY 2007, claimed energy savings for non-residential programs was much greater than what was achieved in FY2008. The program manager cited that the biggest challenge facing the commercial programs is the lack of funds from customers to pay their portion of energy efficiency improvements beyond the program rebate levels. The weak local economy has been the prime contributor to this factor. An improving economy will improve program participation and the program manager thought that new program initiatives that require little, if any, program participant funds may be needed. Other nearby utilities have programs of this nature, such as the refrigeration gasket program, and MID should consider expanding its offerings.

4 ESTIMATED BUDGET

The budget to complete an impact evaluation that includes a telephone survey and on-site evaluation of five non-residential program participants includes consultant staff time to:

- Talk with MID staff, gather all relevant project materials and review of those materials;
- Residential telephone survey;
- Non-residential on-site verification visits and in some cases short-term metering efforts;
- Development of the residential and non-residential measure realization rates;
- Development of the residential CFL net-to-gross factor; and
- Creating a final DSM impact evaluation report.

Based on our experience with doing similar studies for a number of POUs in California, our estimate for a budget is \$43,440. Table 5 provides detail for this budget.

Table 5: Merced Impact Evaluation Proposed Budget

| Personnel | Project Function | Rate | Task 1 Finalize Residential CFL Survey and Draw Sample | Task 2 Conduct Residential CFL Survey and Perform Analysis of Results | Task 3 Identify Non-Residential Evaluation Sample | Task 4 Non-Residential On-Site Visits | Task 5 Calculate Non-Residential Impacts | Task 6 EM&V Report | Total Hours | Total |
|---------------------------|------------------|-------|---|--|--|--|---|-----------------------|-------------|-----------------|
| Kevin Cooney | Principal | \$240 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | \$480 |
| Gary Cullen | Project Manager | \$175 | 4 | 8 | 4 | 0 | 8 | 32 | 56 | \$9,800 |
| Deborah Swarts | Engineer | \$150 | 0 | 0 | 4 | 12 | 40 | 16 | 72 | \$10,800 |
| Jackie Goss | Engineer | \$100 | 0 | 0 | 0 | 12 | 32 | 16 | 60 | \$6,000 |
| Wayne Leonard | Engineer | \$100 | 0 | 0 | 0 | 12 | 32 | 16 | 60 | \$6,000 |
| Lakin Garth | Analyst | \$90 | 4 | 64 | 0 | 0 | 0 | 16 | 84 | \$7,560 |
| Administrative Staff | Admin | \$65 | 0 | 16 | 0 | 0 | 0 | 4 | 20 | \$1,300 |
| | | | 8 | 88 | 8 | 36 | 112 | 102 | 354 | \$41,940 |
| Other Direct Costs | | | | | | | | | | |
| | Travel | | | | | \$1,200 | | | - | \$1,200 |
| | Equipment | | | | | \$300 | | | - | \$300 |
| | Total Labor | | \$1,060 | \$8,200 | \$1,300 | \$4,200 | \$13,800 | \$13,380 | - | \$41,940 |
| Total Cost by Task | | | \$1,060 | \$8,200 | \$1,300 | \$5,700 | \$13,800 | \$13,380 | - | \$43,440 |

APPENDIX A: MERCED CFL SURVEY

Hello, I'm _____ with Summit Blue Consulting, a professional energy evaluation research firm. We are doing a survey for your electric utility, Merced Irrigation District, to assist them in energy efficiency planning. We assure you that this is not a sales effort, but for research purposes only. This survey should only take about 10 minutes and is in regards to the lighting in your home.

Q1. Roughly, how many lighting fixtures do you have in your home?

1. Exact estimate: _____
2. Range - less than 20: ____
3. Range - 20 to 30: ____
4. Range - 30 to 40: ____
5. Range - Over 40: ____
6. Don't know (if after probing they don't give even a range, then Thank you and terminate and replace them in the sample.)

Q2. Roughly, what percentage of these fixtures currently have CFLs?

1. Exact estimate: _____%
2. None ____
3. Range - less than 10%: ____
4. Range - 10 to 20%: ____
5. Range - 20 to 30%: ____
6. Range - 30 to 40%: ____
7. Range - 40 to 50%: ____
8. Range - 50 to 60%: ____
9. Range - 60 to 70%: ____
10. Range - Over 70%: ____

Q3. How do you regard CFLs in comparison to incandescent bulbs?

1. CFLs are better ____
2. About the same ____
3. Not as reliable, but I still use them ____
4. The light quality is not as good, but I still use them ____
5. I generally don't like them and put them only in out of the way fixtures ____
6. I don't like them and won't use them ____
7. Don't know ____

Q4. Do you remember receiving free CFLs from MID?

1. Yes ___
2. No ___
3. Don't remember ___

Q4A. Were these CFL bulbs you received in good condition?

1. Yes ___
2. No ___
3. Don't Know ___

Q4B. Are these CFL bulbs still operational in your home?

1. Yes ___
2. No ___
3. Don't Know ___

Q4C. "If No, why not?"

1. Never installed ___
2. They were not in working order when received ___
3. They don't work anymore ___
4. I didn't like them, so I don't use it anymore ___
(Probe for reason they did not like them): _____
5. Other (specify) _____"

Q5: Did you use CFL light bulbs in your home before receiving these free bulbs?

1. Yes ___
2. No ___
3. Don't Know ___

Q6. Did your household use of CFL light bulbs change after receiving the free bulbs?

1. Yes, increased use ___
2. Yes, decreased use ___
3. No, stayed about the same ___
4. Don't Know ___

Q7: Would you have purchased additional CFLs even if these free bulbs were not provided by MID?

1. Yes, but not as many ___
2. Yes, about the same amount ___
3. No ___
4. Don't Know ___