Final Evaluation Report for

The Alliance to Save Energy
Green Schools Green Communities
2002-2003 School Programs

Submitted by:

Vanward Consulting

In conjunction with:

Equipoise Consulting Incorporated

Ridge & Associates

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1 EXECUTIVE SUMMARY

For the 2002-2003 program years (PY), the Alliance to Save Energy (ASE) Green Schools Green Communities (GSGC) Program was offered in the Pacific Gas and Electric Company (PG&E) and Southern California Edison Company (SCE) service territories. These local programs had specific emphasis on involving hard-to-reach customer populations, and ASE set different goals to assess the achievement of this and other program objectives. Vanward Consulting, in conjunction with Equipoise Consulting Inc. and Ridge & Associates (the Team), conducted the evaluation of the PY2002-2003 ASE GSGC School Programs. The evaluation had multiple objectives as indicated below with summarized results.

Describe and Document Program Elements and Methods

The GSGC Program is a comprehensive and long-term approach to school energy efficiency, bringing together the facility, instructional and administrative staff members, and students in a cooperative effort to improve education, using energy as a tool. Energy savings are achieved through no-cost behavioral and operations changes. A percentage (usually one-half) of the dollar savings due to the no cost behavioral and operations changes can be returned to the individual schools that achieved the savings, with the remainder going to the general district facilities budget. Potentially, the returned savings can be used to purchase books, computers, fund field trips and other educational activities, as determined by the principal with input from school teams. While this was a marketed component of the Program, interviews with ASE staff revealed a few cases where districts actually returned a portion of the dollar savings to schools. However, the evaluation team made no effort to determine the total extent of potential dollar savings resulting from the Program or whether those savings were shared between the district and the schools.

In addition, the Program works to increase awareness and understanding of energy efficiency and its relationship to the environment and finances amongst the Program participants as well as in the community and, when posisble, in the students' homes. The Program also has pursued opportunities to align with other programs to supplement current educational activities and to maximize its efforts to increase awareness and understanding about energy efficiency and achieve energy savings in schools and the community. These efforts include working with utilities to obtain technical assistance, talking to facility staff at other institutions to share ideas about saving energy, and partnering with ICLIE, an international climate change organization in Sonoma County.

A core program component was to conduct baseline and energy use tracking for the schools about twice a year as a means of estimating the savings resulting from implementing any no-cost behavioral and operations changes. Reported energy savings are based on calibrated EZ Sim files using billing data from the schools and nearby weather data. The school utility bills provide both the energy use and cost per month. After a school has implemented changes over an extended period of time, an analyst uses the model to calculate an updated energy use estimate called the baseline that is then compared to the actual utility energy use to estimate energy savings. The monthly estimated energy savings from the comparison between the baseline and current usage are multiplied by an estimated annual average cost to calculate a monthly monetary savings. This information is then provided to the district.

Students are integrally involved in the efficiency activities, from participating in energy patrols to conducting in-depth school audits. Classroom activities include instruction, energy saving activities, and interaction with others from the school, other GSGC Schools, and the broader community. The GSGC instructional materials are correlated to the California Department of Education standards so they will be easy for teachers to make them a part of the students' academic learning. Some high school and middle school students participate in the Savings Through Energy Management (STEM) Program offered by Wilson Educational Services, Inc., a three-to-five-day program for a group of students and their teacher that teaches participants to recognize real energy problems in the school, identify appropriate and cost-effective solutions to the problems, gather data, calculate the savings in fuel and dollar units, and present the information effectively.

Document Program Goal Achievements and Performance Metrics

The Team documented the number of districts and schools reached by the Program, including the number of hard-to-reach schools. The ASE reached or exceeded each of its goals in both the PG&E and SCE service territories. Exhibit 1.1 presents the goals and achievements for both service areas and for each filed goal.

Exhibit 1.1
Program Goals and Documented Achievements

PROGRAM		N DISTRICTS	N SCHOOLS	N HTR
ASE – PG&E	**GOAL**	3	15	7
	ACHIEVED	10	19	10
ASE – SCE	**GOAL**	5	30	15
	ACHIEVED	6	33	25
Total	**GOAL**	8	45	22
	ACHIEVED	16	52	35

In addition, there were 11 administrators, 122 teachers, and 31 custodians, who directly participated in the GSGC Program. The Program reached many more through school assemblies, parent-teacher meetings, and community outreach activities. There were a total of 81 strand plans developed, and both surveyed teachers and custodians report that they implemented different no-cost behavioral and operations changes. Teachers also report that the majority of students implemented no-cost behavioral changes as a result of participating in the Program. The STEM program was offered in three (3) middle schools and seven (7) high schools; there were 193 students and 10 teachers who participated.

Examine Program Process

Overall the local program staff (LPS) report that the process for working with the ASE to implement the GSGC Program worked well. There were no significant issues with communications, training, or meeting their deliverables to the ASE. In some cases there was mixed opinion about the effectiveness of communications with respect to whether there were bottlenecks in the flow of information and whether communications helped prepare the staff to implement the Program. These discrepancies should be investigated further to determine whether process improvements could be made to improve these issues.

Similarly, teachers and custodians report that they are satisfied with their overall experience in participating in the GSGC Program. Teachers had very high satisfaction ratings of the key Program elements, and were only somewhat dissatisfied with the process for conducting community-based activities through the Student Advisory Council. Given that the ASE GSGC Program staff and LPS believed that this process worked well, the ASE might investigate whether improvements could be made to improve this process from the point of view of teachers. In contrast, custodians seemed to be somewhat dissatisfied with specific program processes. The primary area of concern for custodians is the process for developing the school action plan and for working with school teams to implement this plan. The ASE should investigate whether improvements could be made to make this process more satisfying for custodians.

Overall, teachers have favorable comments about the GSGC Program materials and resources including that they find the materials are easy to understand, are credible, and that they provide sufficient material to develop classroom activities that focus on energy.

The Team looked at the process used by the GSGC Program to calculate energy savings to determine if the savings coming out of that process were realistic. Based on this analysis, the evaluation team believes that there are difficulties within the process such that any estimated energy impacts should be provided only with a highly visible caveat indicating that, while the savings were created using a calibrated computer simulation, actual savings may be absent, less, or more than stated. The EZ Sim model, as it is used within this Program, should not be the basis for any monetary exchanges unless the Program puts more resources to the creation and maintenance of the models. Recommendations were provided if the Program chooses to maintain this component as a core part of the program. Alternatively, the evaluation team recommends that the ASE investigate a feasible method for linking Program recommended changes and actual implemented no-cost behavioral and operations changes in order to devise a more straightforward and simplified method for estimating the savings earned by schools.

The GSGC Program is being implemented per the program implementation plan and was able to achieve its expected outcomes. While there were no specific changes to the program as originally designed, there were some enhancements to various program elements. For example, in the PG&E area, the students were able to conduct small business audits in the community, and in the SCE area, the local program staff encouraged existing program participants to mentor new program participants.

Examine the Information Component of the Program

An analysis of the participant surveys suggests that the GSGC Program has indeed impacted participants in terms of the information provided regarding energy conservation. As a result of participating in the Program, participants report that they have experienced changes in their attitudes, awareness and knowledge of energy efficiency. Teachers also report changes in the attitudes, awareness, and knowledge of energy efficiency on the part of their students, and most indicate that their students have implemented some behavioral changes to potentially save energy at the school.

While we were unable to fully investigate the type and number of no-cost behavioral and operations changes made, we did ask participants whether they had made some key changes as a result of participating in the Program. The majority of all participants indicated that they made changes or planned to make these changes in the near future. We recommend however that the ASE do more to track the specific recommendations made to schools, the basis for the recommendations, and the number of recommendations implemented in order to better document the full impacts of the Program.

The remainder of the report provides details to this summary.

2 OVERVIEW

2.1 Program

In 2002, the Alliance to Save Energy (ASE) was awarded funding from the California Public Utilities Commission (CPUC) to provide the Green Schools Green Communities Program, a local information-only school energy efficiency program, in the Pacific Gas and Electric Company (PG&E) and Southern California Edison Company (SCE) service territories. Funding was provided for the program period beginning in 2002 and continuing through December 2003. The ASE was later given an extension until June 1, 2004 to complete all activities relating to this local program.

The purpose of the Green Schools Green Communities Program is two-fold:

1. to reduce energy costs in schools, and
2. to educate students and their families about energy and the link between efficiency, the environment, and finances.

According to the Program Implementation Plan (PIP), the GSGC Program is a comprehensive and long-term approach to school energy efficiency, bringing together the facility, instructional and administrative staff members, and students in a cooperative effort to improve education, using energy as a tool. Energy savings are achieved through no-cost behavioral and operations changes. A percentage (usually one-half) of the dollar savings due to the no cost behavioral and operations changes may be returned to the individual schools that achieved the savings, with the remainder going to the general district facilities budget. Potentially, returned savings can be used to purchase books, computers, fund field trips and other educational activities, as determined by the principal with input from school teams. Students are integrally involved in the efficiency activities, from energy patrols to conducting in-depth school audits in some cases. Classroom activities include instruction, energy saving activities, and interaction with others from the school and broader community. The GSGC instructional materials are correlated to the California Department of Education standards so they will be easy for teachers to use to strengthen student academic learning. The local programs also have specific emphasis on involving hard-to-reach customer populations.

The GSGC Program has an Advisory Council whose prime responsibility is to review and evaluate the GSGC Program to ensure that the components are educationally sound and relevant and bring visibility to the initiative in California. Council activities entail: reviewing and evaluating program content and design including new and existing instructional materials and learning activities; advising on Program communications and marketing strategies; suggesting ways that the Program can gain visibility; and, providing other review and evaluation as needed. Council members volunteer for two-year terms and attend at least two meetings each year. Smaller focus group meetings or individual reviewing may also occur. Members are selected from all levels and disciplines and include representatives from education, government, business and the community.

The GSGC set forth seven program goals and objectives:

1. Provide energy focused, project-based and other integrated learning opportunities for students. (The idea is to make the program educationally valuable to student learning so that teachers will

use energy as a learning tool and create continuing value of the program and program sustainability.)

2. Engage teams of students, teachers, administrators, and facilities staff in understanding and addressing efficiency and conservation opportunities in schools and operations.
3. Achieve immediate and persistent energy savings through no-cost behavioral and operations changes and comparisons to baselines.
4. Increase awareness and understanding of energy efficiency and its relationship to the environment and finances.
5. Increase energy savings at K-12 school facilities.
6. Increase energy awareness and savings in the community and, when possible, in the students' homes.
7. Pursue opportunities to align with other programs to supplement current educational activities.

The Program established additional measures of program participation and performance including the:

- numbers of staff, teachers, and administrators who participate;
- number of school audits completed; and,
- number of no-cost energy improvements adopted.

The focus of the evaluation was on the metrics established by program implementers to assess program performance and the achievement of identified program goals. The evaluation also focused on program objectives 1-6, in that they are associated with specific project activities and outcomes that relate to program effectiveness and performance. Objective 7 deals more with general program or administration activities that might enhance the design of the program. While progress in this area is described in this report (See Section 5.1), these activities are not the core activities underlying the theory of why the GSGC activities are expected to increase participants' awareness of energy efficiency opportunities or that lead to immediate (and, ultimately, persistent or long-term) energy savings as a result of changes in behavior and practices.

2.2 Evaluation

2.2.1 Objectives

Vanward Consulting, in conjunction with Equipoise Consulting Inc. and Ridge & Associates (the Team) conducted the evaluation of the PY2002-2003 ASE GSGC Programs. Given the available evaluation budget (at 1.8% of the total program implementation budget), the Team felt that two approaches were possible: one, focus on one or two linkages and explore these points to the extent possible given available budgets; or, two, examine a number of the key linkages, but give a general overview or assessment of these links. The Team decided to pursue the second option since more linkages relevant to the overall program could be assessed, providing a broader assessment regarding program performance, although only descriptive details would be provided. Accordingly, the evaluation entailed a limited effort that focused primarily on process evaluation type activities.

The objectives of the evaluation were to:

1. Describe and document the core program elements and/or methods,
2. Assess the GSGC Program via basic process evaluation activities focusing on the key, core program components, and,
3. Assess the information component of the Program via basic impact evaluation activities focusing on STEM pre-/post-test results.

These three objectives made up the three aspects of the evaluation. The first objective was concerned with documenting program activities and goals. Here, the Team, reviewed program data to construct a comprehensive description of the core program and to confirm whether reported goal and program achievements were accurate. While we confirmed the reported number of district/school and HTR participants and reported other program achievements such as the total number of participants and the number of school audits conducted, the available budget did not permit a more formal verification of the established goals and achievements.

The second objective involved assessing the effectiveness of core Program processes through basic process evaluation activities. For this aspect of the evaluation, the Team conducted an in-depth interview with the Program liaison and included process related questions on mail surveys sent to teachers, custodians, and the ASE Local Program staff. The Team also reviewed the Program's methodology for providing savings information to schools as part of the baseline and energy use tracking provided by the Program.

The last objective was primarily concerned with impact issues. In this aspect of the evaluation, the Team investigated the impacts resulting from information provided by the Program. Specifically, the evaluation examined whether the Program increased participants' awareness and knowledge of energy efficiency or positively impacted participants' attitudes toward energy efficiency.

2.2.2 CPUC Stipulated Items

The CPUC Energy Efficiency Policy Manual[1] stipulated eight specific Evaluation, Measurement, & Verification (EM&V) objectives. Exhibit 2.1 below presents specifically how the evaluation met each of the policy manual objectives.

Exhibit 2.1.
CPUC Policy Manual EM&V Objectives

EM&V OBJECTIVES	HOW THE EVALUATION MET THE OBJECTIVE
1. Measuring level of energy and peak demand savings achieved.	*As this is an information program, no energy or demand impacts are expected and were not estimated in this evaluation.*
2. Measuring cost-effectiveness (except information-only)	*This is an information only program and hence, no such analysis was required.*
3. Providing up-front market	*This is not a new program and there is no expectation*

[1] California Public Utilities Commission. Attachment 1. Energy Efficiency Policy Manual. November 29, 2001.

EM&V OBJECTIVES	HOW THE EVALUATION MET THE OBJECTIVE
assessments and baseline analysis, especially for new programs	*that energy impacts associated with this information-only program should be measured. However, other baseline analyses have been completed within the last five years, so a baseline analysis was not done as a part of this evaluation. The previous evaluation studies are listed in the Bibliography Section of this research plan.*
4. Providing ongoing feedback, and corrective and constructive guidance regarding the implementation of programs.	*This was provided via the recommendations section in this report.*
5. Measuring indicators of the effectiveness of specific programs, including testing of the assumptions that underlie the program theory and approach.	*The Vanward Team articulated the program and implementation theories, identified possible indicators of immediate, intermediate, and long-range outcomes, and assessed the desirability and feasibility of obtaining these data in light of the stated Program objectives. Descriptive statistics were compiled relating to key linkages identified in the program and implementation theories.*
6. Assessing the overall levels of performance and success of programs.	*The Vanward Team documented the extent to which the Program achieved its stated objectives. Data were gathered from program records, participant surveys, and in-depth interviews to assess the overall level of performance and success of the Program. The results of that assessment are included in this report.*
7. Informing decisions regarding compensation and final payments.	*Because this is an information-only program, this objective was not required.*
8. Helping to assess whether there is a continuing need for the program.	*This assessment was developed from the analysis of Program success in CPUC objective 6. The results of this assessment are included in this report.*

In addition to meeting the objectives above, it was stated that all evaluation plans should address the components listed in Exhibit 2.2. Because the GSGC Program is an information-only program, only the non-shaded components of Exhibit 2.2 were addressed in this evaluation.

Exhibit 2.2
Components of an EM&V Plan

Baseline Information *(not covered in this evaluation)*
• Determine whether or not baseline data exist upon which to base energy savings measurement. Existing baseline studies can be found on the California Measurement Advisory Committee website (http://www.calmac.org/) and/or the California Energy Commission website (http://www.energy.ca.gov/). Detailed sources of baseline data should be cited.
• If baseline data do not exist, the implementer will need to conduct a baseline study (gather baseline energy and operating data) on the operation(s) to be affected by the energy efficiency measures

Baseline Information *(not covered in this evaluation)*
proposed.
• If the baseline data do not exist and the implementer can show that a baseline study is too difficult, expensive or otherwise impossible to carry out prior to program implementation, the contractor should then provide evidence that baseline data can be produced or acquired during the program implementation. This process should then be detailed in the EM&V plan.
Energy Efficiency Measure Information
• Full description of energy efficiency measures included in the program, including assumptions about important variables and unknowns, especially those affecting energy savings.
• Full description of the intended results of the measures.
Measurement and Verification Approach *(not covered in this evaluation)*
• Reference to appropriate IPMVP option.
• Description of any deviation from IPMVP approach.
• Schedule for acquiring project-specific data.
Evaluation Approach
• A list of questions to be answered through the program evaluation.
• A list of evaluation tasks/activities to be undertaken during the course of program implementation.
• A description of how evaluation will be used to meet all of the Commission objectives described above.

The energy efficiency measure information areas were covered through a program implementation and theory approach with the specific no-cost behavioral and operations measures implemented being listed in the Results section of this report. The evaluation approach was detailed in the final research plan dated 12/30/03 and is presented in Section 3 of this report.

In order to better focus the efforts in addressing these three main areas of evaluation, theories were developed of how this program is operated and is designed to achieve its stated objectives. The next section discusses the implementation theory and program theory.

2.2.3 Implementation and Program Theory

Some authors (Rogers et al, 2000) have posited two very basic types of theories that can be used in program evaluation: 1) implementation theory, and 2) program theory. Demand Side Management (DSM) implementation theory depicts the basic flow and mechanics of the program consisting of a sequence of activities that begin with program outreach and end with customers' adoption of recommended measures and/or practices.

The *implementation theory* tells the evaluator *how* the program is supposed to operate in the field. In a process evaluation, the evaluator can examine the field implementation of a program to determine if there are any significant deviations from the intended program design. If there are, the evaluator can explore why these deviations occurred and what they imply regarding the achievement of any of the

expected outcomes. Exhibit 2.3 presents the implementation theory with the causal linkages numbered from 1 through 45.[2]

The *program theory* seeks to explain *why* the program activities (i.e., the underlying mechanisms) are expected to lead to the achievement of immediate, intermediate, and long-term outcomes. Weiss (1997) stresses that understanding the underlying theory of the program is essential to developing the most appropriate evaluation and that a good evaluation is based on defining and analyzing the assumptions of the program theory. In general, the program theory provided here consists of GSGC activities and the hypothesized direct and indirect causal linkages between these activities and the desired impacts. There are many different areas in which programs can go astray but, by focusing on program theory, evaluators can keep themselves on track and provide a meaningful assessment. Exhibit 2.4 presents the program theory with causal linkages numbered from 1 though 19.

The Team conducted an evaluability assessment (EA) in Phase I of the evaluation for the ASE GSGC Program, the details of which are presented in Appendix D[3]. These two theories were the outcome of that assessment and were used to structure the evaluation approach and guide the data collection efforts described in the following section.

[2] There are no numbered links 39 or 43 in the implementation theory model.

[3] The Phase I evaluation study was conducted in conjunction with the San Diego Regional Energy Office, and the original results of that assessment are included in Appendix D. The most current versions of the implementation and program theories are presented in Exhibit 2.3 and Exhibit 2.4.

Exhibit 2.3.
GSGC Implementation Theory Model

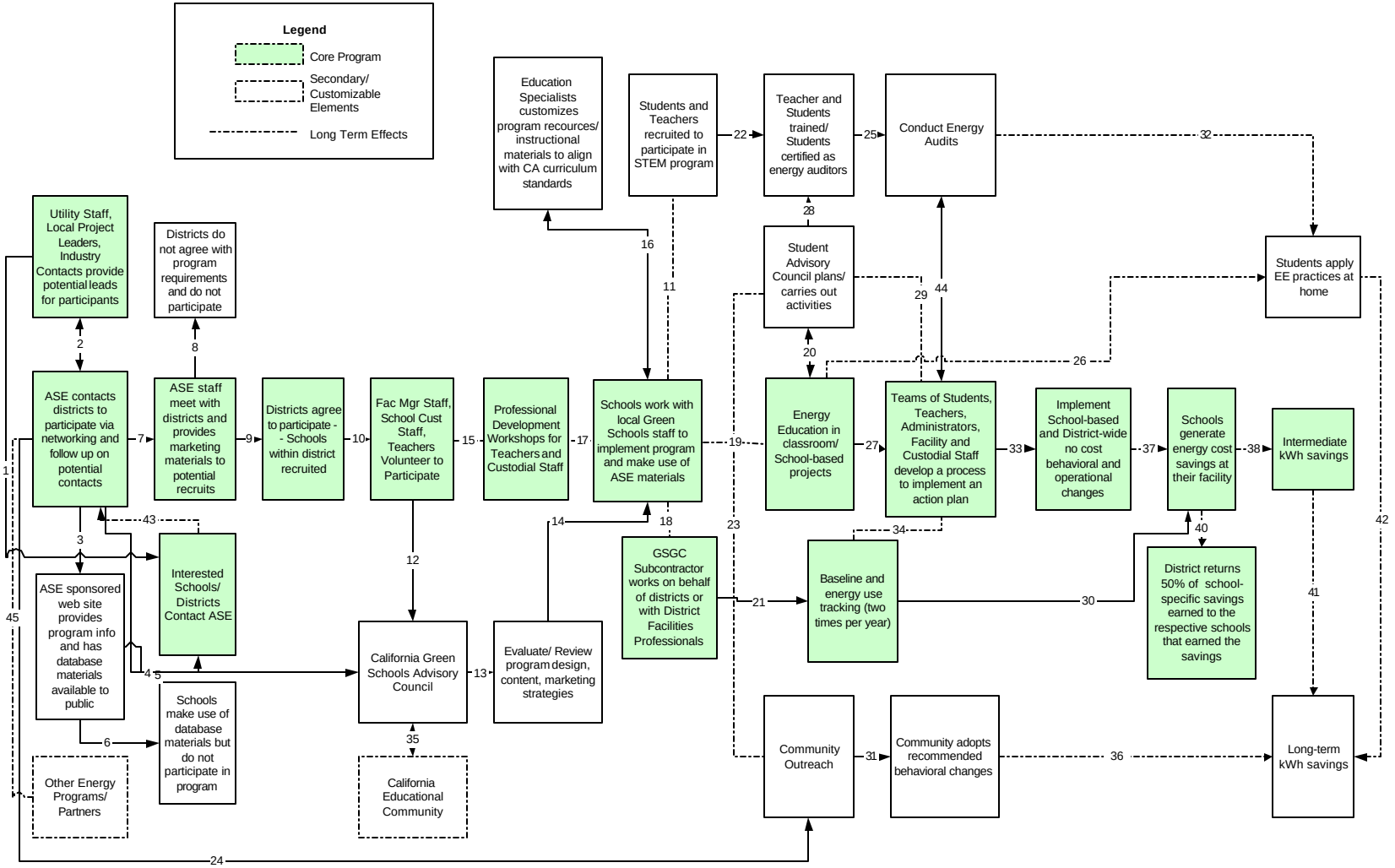
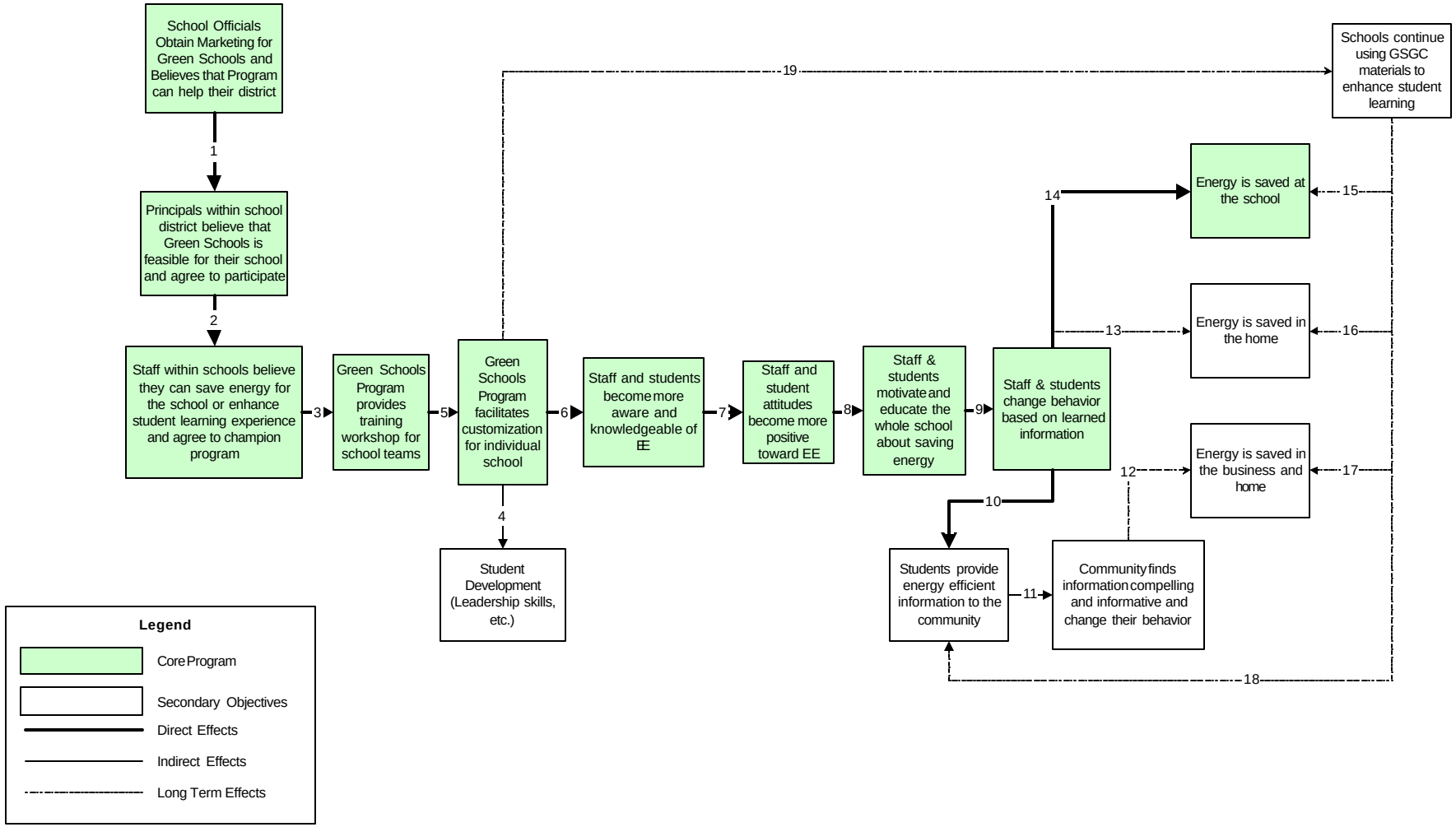


Exhibit 2.4
GSGC Program Theory Model



3 METHODS

This section provides the rationale for how the evaluation was conducted.

Based on the EA, the evaluation consisted of three primary activities in order to provide the needed information:

1. Description and documentation of specific program elements and/or methods,
2. An assessment of the GSGC Program via basic process evaluation activities focusing on key, core program components, and,
3. An assessment of the information component of the Program via basic impact evaluation activities focusing on STEM pre-/post-test results.

3.1 Data Sources

Data was gathered from both primary and secondary sources. All data collection took place during the first and second quarters of 2004.

Primary Data Collection

Various data collection instruments were created to gather the data required by the evaluation. Specifically, the evaluation team designed three survey instruments. All teachers and custodians who participated in the Program were mailed out a survey specific to them. The local program staff, which worked directly with Program participants to implement the program, were emailed the third survey instrument. All survey instruments are located in Appendix B. These surveys were designed to gather descriptive data relating to key program components and to gather self-reported data about the impacts of the Program on participants' attitudes, awareness, and knowledge of energy efficiency. In addition, the surveys were used to inquire about the types of no-cost behavioral and operations changes implemented as a result of the Program. In order to further assess process issues, the evaluation team also performed an in-depth interview with the ASE Program Liaison.

The planned and completed number of data points is shown in Exhibit 3.1.

Exhibit 3.1
Planned and Completed Data Points

Collection Instrument	Data Points Planned	Data Points Completed	Response Rate
Teacher Mail Survey	Census	42	34.4%
Custodian Mail Survey	Census	9	26.5%
Local Program Staff Survey	Census[4]	2	(2 of 5)
In-Depth Interviews	1	1	N/A

Exhibit 3.1 presents the response rates for the participant and local program staff surveys. Given the small participant populations the Team decided to survey a census of all participants. Ultimately, there were 156 participants, who were mailed surveys: 122 teachers and 34 custodians[5]. The teacher mail survey response rate is based on the entire outgoing sample and includes one teacher survey that was returned given the teacher no longer worked at the school. To maximize the number of completes, the local program staff sent reminders to the teachers and custodians to complete the surveys.

The Team received surveys from 2 local program staff. As explained previously, all local program staff who were directly involved with the implementation of the program were sent the survey. However, one staff member was unavailable to complete the survey, another no longer worked with the company responsible for implementing the program in the PG&E service area, and another staff member did not complete the survey.

One in-depth interview was planned with the ASE Program Liaison. The evaluation team conducted this interview as planned.

Secondary Data Collection

Secondary data was gathered from the program tracking data to obtain information regarding program accomplishments and goals and relating to the baseline and energy use tracking element of the program. Specifically, the following documents were obtained and analyzed:

- List of districts to which the ASE marketed the program and who agreed to participate.
- List of the community outreach activities carried out by the Student Advisory Council.
- Program strand plans completed by each school participant.
- School profiles of each school participant.
- Baseline and energy use information for a subset of school participants.

[4] The original plan was to survey two local program staff members. Later, we learned that there were more staff members who were directly involved in implementing the program. As such, the survey was sent to all local program staff directly involved in implementing the GSGC Program. Ultimately, we were only able to get results from 2 staff members, both of whom work in the SCE service area.

[5] The number of custodians includes two garden coordinators and one facilities manager.

- Copies of Program educational materials.
- Lists of administrators, teachers, and custodians who participated in the program.
- Summary evaluation results for the professional development workshops offered.
- Summary participant information relating to the STEM program.[6]

The types of evaluation questions investigated by data source are indicated in Exhibit 3.2.

Exhibit 3.2.
Evaluation Question, by Source of Data

Evaluation Question	Program Database	Teacher/ Custodial Staff Surveys	Regional ASE Staff Surveys	In-Depth Interview with ASE Program Liaison	STEM Pre-Tests and Post-Tests	Review of Method for Providing Savings Information
How many administrators, teachers, staff and students participate in the GSGC Program?	X	X				
To what extent have attitudes toward EE become more positive as a result of the program?	X	X				
Have GSGC participants become more aware and knowledgeable about EE as a result of the program?		X			X	
How effective/satisfactory are the key processes for participating in the program?		X	X	X		X
How useful are the GSGC resources that are provided and do they enhance the student learning experience?		X				
To what extent is energy education taught in the classroom?		X				
How effective/useful are the teacher/staff training workshops?		X				
How effective is the process for participants to work with program staff to implement the program?		X	X	X		

[6] The evaluation team originally intended to collect pre- and post-test data for each STEM participant. However, this data was not available. We were only able to get information about the total number of students and teachers who participated.

Evaluation Question	Program Database	Teacher/ Custodial Staff Surveys	Regional ASE Staff Surveys	In-Depth Interview with ASE Program Liaison	STEM Pre-Tests and Post-Tests	Review of Method for Providing Savings Information
How effective is the flow of information between the regional program staff and the ASE?			X	X		
How faithful was the program implemented per the PIP and what were the reasons for deviations, if any?			X	X		
What are the types of no-cost behavioral and operations changes that were made?	X	X				
How successful was the Program at reaching its stated goals?	X		X	X		

The evaluation methods incorporated both process and impact methods to answer the questions posed in Exhibit 3.2.

3.2 Process Evaluation Activities

A process evaluation gathers information on how the program is carried out in the field. For example:

- What is the flow of activities that define the Program?
- How is information flowing from the program managers/implementers to the participants in the Program?
- How many participants (districts, schools, teachers, and students) are there?
- What pieces of information does the Program provide?
- Is the program being faithfully implemented according to the original PIP?
- If there are deviations from the original design, what were the reasons?
- How successful was the effort to reach hard-to-reach populations?

Process evaluations can have more than one purpose. On one hand, process evaluations can be used to help "provide ongoing feedback and corrective and constructive guidance regarding the implementation of the program"[7]. In this type of evaluation, the evaluator works very closely with the Program Implementer and determines potential kinks in information flow that can be corrected within or across program years. For this evaluation, three, brief surveys comprised of closed-end questions targeted towards answering process questions were administered to participating teachers, custodial staff, and

[7] CPUC Energy Efficiency Manual, Page 31.

the local ASE program staff, respectively. Also, an in-depth interview with the ASE California program liaison was conducted.

A process evaluation can also be used to answer the questions about why anticipated program outcomes are not achieved. A thorough accounting of the Program as it was implemented is essential to providing information back to the CPUC at the end of 2003. This step is crucial for "helping to assess whether there is a continuing need for the program".[8] While this evaluation only provides descriptive statistics addressing the key program and implementation theory links, limited information is provided to address these types of process questions.

For this evaluation, the Program processes were covered and provided details of specific program activities, including, but not limited to, the process for implementing different program elements, the number of participants, a basic review of the material and resources available to participants, the types of marketing efforts conducted, and any deviations from the original program plan. This information was gleaned from simple counting of information within the program database as well as from the surveyed participants. Simple descriptive statistics were used to highlight some program activities while qualitative analysis was used other data.

The other area analyzed used process methods was the potential energy cost savings achieved at the participating school facilities. According to the Internet website (http://www.ase.org/greenschools/about.htm):

> "The Green Schools Program enters into an agreement with the school district to return a portion of the savings back to the schools. Savings helps the district leverage funds and helps the school maintain its Green Schools Program and bring new resources to the school like library books or buses for field trips."

While the Program Implementation Plan (PIP) states:

> The Alliance's Green Schools Program provides energy-focused, project-based learning opportunities for students, engages teams of teachers, administrators, facilities staff and students in understand and addressing efficiency and conservation opportunities in schools, and achieves immediate and persistent energy savings through behavioral and operations changes.

Although both the ASE website and PIP mention energy savings, this is an information-only program and was not obligated to provide energy and demand impacts from the program. However, one of the program metrics in the PIP for evaluating program progress was: "Energy Savings from no-cost behavior and operations changes". This metric, along with the fact that the GSGC program includes energy savings as a core part of the program (See linkage 40 in Exhibit 2.3), meant that while there was no energy impact evaluation required, some sort of assessment was needed. The evaluation team assessed the process involved with the creation of the estimates to provide feedback on the veracity of the energy savings indicated and determine if there were any recommendations to the process.

Because of the small budget for evaluation of this program, only a cursory engineering assessment of the potential energy savings component of the program was possible. As alluded to previously, this assessment does not provide an indication of the actual savings versus what is claimed by the program.

[8] Ibid.

It does, however, shed light on the likelihood of those savings based on a review of how the savings are calculated.

The evaluators obtained savings data from the program on the school districts (SD) and schools shown in Exhibit 3.3.

Exhibit 3.3
Schools with Energy Savings Data Reviewed

School District (SD)	School[1]	Detailed Data[2]	Summary Data[3]
Southern California Private	Ambassador Christian School	X	
Rialto USD	Bemis Elementary, Myers Elementary, Simpson Elementary, Kucera Middle, Morgan, Rialto Middle, Eisenhower High, Milnor Zupanic Alternative	X	
	Boyd Elementary, Dollahan Elementary, Hughbanks Elementary, Trapp Elementary, Kolb Middle		X
San Mateo Union High	Hillsdale High	X	
Hesperia USD	Mesquite Trails Elementary, Ranchero Middle, Sultana High	X	
Petaluma Joint Union High	Petaluma Jr. High, Casa Grande High (McDowell)	X	
Tamalpais Union	Tamalpais High	X	

[1] Schools in gray have data from the second year of participation in the ASE Green Schools Program. Southern California Edison sponsored the first year in the program (school year 2001-2002).

[2] Detailed Data – Excel spreadsheet with usage data by month for one or more meters at the school. This included kW, kWh, and therm usage as well as monthly cost for electric or natural gas accounts. An EZ Sim input file was also included.

[3] Summary Data - Excel table showing the baseline energy use, kWh reduction, $ savings, and percent savings

As indicated in Exhibit 1.1, there are 16 school districts in the program, encompassing 52 schools. At the time of the evaluation, all schools in the PG&E service territory and 24 of 35 schools in the SCE service territory had baseline and potential energy savings data. The evaluation team assessed only a portion on the total sites. To give a sense of where the evaluation team reviewed the potential energy savings data, Exhibit 3.4 provides the total number of schools by school district and the number of schools with energy savings reviewed, indicating that 23% (12 of 52) of the schools with potential

energy savings had some sort of review. For those schools with detailed data provided, the evaluation team used EZ Sim to review the inputs.

Exhibit 3.4
Total Schools with Energy Savings Data Reviewed

School District	Total Participating Schools	Total Schools with Energy Savings Data Reviewed
Rialto USD	10	5
San Bernardino County Office of Education (not an actual district)[9]	1	0
Yucaipa-Calimesa Joint USD	3	0
Southern California Private SD	1	1
Redlands USD	1	0
San Bernardino City Schools	5	0
Hesperia USD	12	2
Vallejo City SD	2	0
San Mateo Union High SD	1	1
Petaluma City Elementary USD	2	0
Petaluma Joint Union High SD	2	2
Tamalpais Union	1	1
Jefferson Unified	4	0
West Sonoma County Union	3	0
Santa Rosa City Schools	1	0
Bennett Valley	1	0
Bellevue Union	2	0
Total	**52**	**12**

The evaluation team had two unstructured telephone discussions with the contractor involved with the calculation of the energy savings to clarify questions that arose from the assessment of the detailed input files and general process. The evaluation team also performed a short literature review in an effort to

[9] The County Office of Education is indicated in reference to Fontana Community Day School, which does not officially fall under the auspices of San Bernardino City USD, but was a participating school in the GSGC Program.

supply a sense of the potential for energy impacts within a school setting due to behavioral changes. This entailed searching the Internet and reviewing documents from the 1994, 1996, 1998, and 2000 American Council for an Energy-Efficient Economy (ACEEE) Proceedings, and the 1999 International Energy Program Evaluation Conference Proceedings.

The detailed results of the energy savings method review and all process activities are presented in Section 4.1.3.

3.3 Impact Evaluation Activities

One of the goals of the Program is to increase awareness and understanding of energy efficiency (EE) and its relationship to the environment and finances by making staff and students more aware and knowledgeable of energy efficiency, changing the attitudes of staff and students toward EE, and causing staff and students to change their behavior based on the new information they have learned through their participation in the Program. In order to investigate whether this goal is being met, the evaluation team provided an assessment of the information aspect of the Program via basic impact evaluation activities. Data gathered from the teacher and custodial staff surveys also included their personal assessments of how student attitudes and behaviors were impacted by participating in the program in addition to their assessment of how behaviors and attitudes, in general, were impacted at the school. In addition, the Team included a question on the survey to inquire whether teachers shared the ASE materials with other teachers who did not formally participate in the GSGC Program, as a modest effort to investigate spillover issues. The mail surveys described in more detail in the next section were used to gather information for this aspect of the evaluation. As stated previously, a census was taken of each key group for these surveys. Contact information was obtained from the program staff in order to send out the mail surveys and a cover letter from the ASE was included to encourage program participants to return the surveys. The outcome of the surveys provide both the Program and the CPUC with descriptive statistics on the degree to which the program was successful at increasing awareness and understanding of energy efficiency. The results of these impact questions are presented in Section 4.2.

4 RESULTS & RECOMMENDATIONS

This section provides the results of the process and impact assessments followed by recommendations.

4.1 Process Evaluation Results

This section provides the results of the process evaluation activities and is divided into three main parts:

- Details of specific program activities, including the number of participants (including hard-to-reach), the marketing and recruitment efforts conducted, participation in and satisfaction with the core components of the program, a review of the material and resources available to participants, and short summaries of various components of the GSGC Program (Section 4.1.1);
- Assessment of the information flow within the Program (Section 4.1.2); and
- Analysis of the method used to calculate potential energy cost savings achieved at the participating school facilities (Section 4.1.3).

4.1.1 Program Details

In Phase I of the Study, the evaluation team worked with ASE GSGC staff to develop program and implementation theory models (See Appendix D). Exhibit 2.3 and Exhibit 2.4 depict the most current theory models for the ASE GSGC Program. GSGC staff report that the Program was implemented per the model and per the program implementation program. Further, the GSGC staff report that there were no program outcomes that were not accomplished, a claim supported by this evaluation.

The ASE program implementation plans outlined the specific goals for the program that were accepted by the CPUC. These filed goals with respect to the number of schools involved, along with the documented achievements are shown in Exhibit 4.1. In addition to the number of districts served, and schools signed up, the ASE Program stated that 50% of the participating schools (in both the PG&E and SCE service areas) would be located in hard-to-reach (HTR) areas. As seen in the table below, the Program met or exceeded its goals in each case.

Exhibit 4.1
Overall Program Goals and Documented Achievements

PROGRAM		N DISTRICTS	N SCHOOLS	N HTR
ASE – PG&E	GOAL	3	15	7
	ACHIEVED	10	19	10[10]
ASE – SCE	GOAL	5	30	15
	ACHIEVED	6	33	25
Total	GOAL	8	45	22
	ACHIEVED	16	52	35

The Program established additional metrics as a measure of overall program performance and participation. While no specific goals were established for these indicators, we report the Program achievements below for those metrics for which data could be obtained[11]. These metrics include the:

- numbers of staff, teachers, and administrators who participate;
- number of school audits completed; and,
- number of no cost energy improvements adopted.

In the PY2002-2003, there were 11 school/district administrators, 122 teachers, 31 custodians, who directly participated in the GSGC Program[12]. The Program reached many more through school assemblies, parent-teacher meetings, and community outreach activities. There were a total of 81[13] strand plans developed, and both surveyed teachers and custodians report implementing no-cost

[10] There were 4 schools in the PG&E service area that met the HTR criterion based on qualified zip codes and 6 that were deemed HTR because the school populations met the HTR criterion even though the schools themselves were not located in a HTR zip code. The school profiles that characterize the student populations are included in Appendix E.

[11] Neither a count of the total number of audits completed nor a complete list of the recommendations made to participating schools for no-cost behavioral and operations changes could be obtained. Therefore, we were unable to document the number of audits completed, the specific recommendations made, nor the number and types of recommendations implemented during this program period.

[12] Ultimately, the teacher surveys did not yield sufficient data to estimate the number of student participants nor adequately assess the extent to which teachers use the energy education materials in the classroom. Teachers reported a range of class time dedicated to using the materials, but without knowing the teachers' load and the base for which these values were estimated, it was impossible to report an accurate estimate. The brief surveys designed for this evaluation were not able to make sufficient inquiry to obtain this data. The ASE might investigate this issue further and more thoroughly in future program evaluations.

[13] Based on the most current program data obtained, the Program reported that there were 38 completed plans and 3 pending in the PG&E area, and 43 completed plans in the SCE area and 2 pending. The strand plan summaries are contained in Appendix E.

behavioral and operations changes as a result of participating in the Program. Teachers also report that the greater majority of the students who participated in the Program also made behavioral changes. Section 4.2.2 investigates more thoroughly the types of no-cost behavioral and operations changes implemented.

4.1.1.1 Program Participants

The GSGC is being implemented in 16[14] school districts in the Pacific Gas and Electric Company and Southern California Edison Company service territories. Exhibit 4.2 presents these participants. Detailed school profiles are provided in Appendix E.

Exhibit 4.2.
Participants in the Green Schools Program

Utility Service Area	District
PG&E	Vallejo City
	San Mateo Union High
	Petaluma Joint Union High
	Petaluma City Elementary USD
	Tamalpais Union
	Jefferson Unified
	West Sonoma County Unified
	Santa Rosa City Schools
	Bennett Valley
	Bellevue Union
SCE	Rialto USD
	Redlands USD
	San Bernardino City USD
	Southern CA Private School District
	Hesperia USD
	Yucaipa-Calimesa Joint USD

[14] Note, one school reached by the Program was Fontana Community Day School and is listed in the School Profiles (contained in Appendix E) as the San Bernardino County Office of Education. While the administration of this school is not officially through the San Bernardino City USD, the County Office of Education is not a district that would be included in terms of meeting the filed goals. However, the school was reached by the program and is included in the count of schools that participated in the GSGC Program.

4.1.1.2 HTR Efforts

The Program established a HTR goal that half of all schools recruited would be HTR. The HTR schools were located in Zip Codes that were designated as HTR by the CPUC. We reviewed the Zip Codes for the participating schools and found that the Program reached a total of 35 HTR schools (out of 52 schools total), including 6 schools that were designated as HTR based on the school profile. The evaluation team verified that all 35 schools were in HTR zip codes. In the PG&E area, there were difficulties in finding schools that were located in qualified zip code areas. As such, some schools were designated as HTR with the approval of the utility program manager because the school population met the HTR criteria. The school profiles used are contained in Appendix E.

The ASE Program liaison indicated that simply having the goal to reach HTR schools was the primary reason why their efforts were successful in this regard. As a result, they employed additional marketing efforts and were more flexible in terms of reaching out to schools outside of their typical population of school participants. Working with these schools did not present any significant obstacles, although this may be because the local program staff had experience working in some of these areas. In addition, the Liaison reports that, while communication barriers may present some difficulties, the Program provides opportunities to overcome these. In this regard, the Liaison indicated, while language barriers may present difficulties in terms of making use of the energy efficiency resources, the students who participate in the Program are able to serve as "ambassadors" and communicate the information to family members and in the community. Also, the students in these schools may live in households that tend to move more frequently, which may present some additional obstacles.

The LPS agree with this assessment. They indicate that neither recruiting nor working with HTR schools posed any significant barriers or difficulties.

Overall, the Program seems to be achieving its stated goals and objectives and accomplishing the majority of its intended outcomes. The LPS seem to support this view. They report that they were able to accomplish each of the anticipated program outcomes as listed in their scope of work and that the overall process of working to implement the GSGC Program worked well. Also, as indicated previously (see Exhibit 4.4 and Exhibit 4.5), both Custodians and Teachers report favorable satisfaction ratings for their overall experience with participating in the GSGC Program. Impacts associated with these outcomes are presented in Section 4.2.

4.1.1.3 Marketing and Recruitment

The ASE contracts with two companies, one within each utility service area, which serve as local program staff implementing the GSGC Program and working directly with the district and school staff in these areas. The local staff are tasked with recruiting schools to participate in the different service areas and these agents worked through existing contacts, such as with the County Office of Education, to market the Program. They also attended school district meetings and made "cold calls" to a number of school districts to recruit them to participate. In some cases, districts may hear about the Program from previous participants or through other means (e.g., the ASE website) and contact ASE directly to learn about participating in the program. ASE staff meet with the potential participants, who are provided Program or marketing materials and are recruited to participate in the Program.

The GSGC Program staff believe that the marketing and recruitment efforts carried out were successful in that a high percentage of those recruited ultimately participate in the program. The ASE Program liaison feels that the Program is marketable given the appeal of the Program as it relates to saving energy and the Program's environmental objectives. However, the biggest obstacle for districts seems to be the suggestion to return a portion of the dollar savings to the schools that earn them. The ASE also believes that the Program is an easier sell when the district is somewhat familiar with the Program as compared to when the ASE markets the Program in districts that are not familiar with the Program.

While the local program staff believe that they were given sufficient orientation, training, and information to recruit schools to participate in the Program, the ASE hopes to improve future marketing and recruitment efforts by doing more to collaborate with other organizations and programs that are already in place within districts and use the GSGC Program to enhance those offerings. This would mean that schools could deal with a lot fewer entities and still gain access to a wide range of services or benefits. (See Appendix E for a list of the districts/schools recruited to participate and those who ultimately agreed to participate.)

GSGC staff suggest that the main motivation for participating in the Program is that teachers and other school staff value the environmental aspects. They have a sense of responsibility to care for the environment and the GSGC Program appeals to this concern. Facility managers participate because they can help the school save money and make the school facility more efficient. Custodians are viewed as caretakers of the school already, but now (as a result of the Program) they get more respect and appreciation and a higher profile of their job/role at the school.

Volunteerism seems to vary by grade level or school with elementary schools and high schools being more inclined to participate with middle schools being less inclined. The grade schools have a smaller group to reach and can impact the whole school, while at the high school level, students are more engaged even though the size of the school may limit their ability to impact the whole school.

4.1.1.3.1 Teacher and Custodian Reported Motivations for Participating

Both teachers and custodians were asked about their motivation for participating in the GSGC Program. Specifically, they were asked whether they agree strongly, agree somewhat, disagree somewhat, or disagree strongly about reasons for participating in the Program. The responses were converted using a four-point scale, where "Agree Strongly" is equal to 4 and "Disagree Strongly" is equal to 1, in order to evaluate the responses. Exhibit 4.3 presents these results. Both teachers' and custodians' responses reflect the notion indicated in the program theory model that participants volunteer to participate because they believe that the Program will save energy for the school and that the Program will enhance the student learning experience. While not a rigorous test, this does provide some evidence to support this element of the program theory.

Exhibit 4.3
Teachers' and Custodians' Reported Motivation for Participating

Respondent	Question	Mean	N	Std. Error of the Mean
Teachers	A. I agreed to participate in the Program because I believed the Program would save energy for my school.	3.64	42	0.117
	B. I agreed to participate in the Program because I believed the Program would enhance the student learning experience.	3.57	42	0.109
Custodians	A. Based on the information I received when I first learned about my school's participation in the GSGC Program, I thought it was a good idea because I believed it would save energy for our school.	3.50	8	0.378

4.1.1.4 Participation in and Satisfaction with Core Program Components

For the most part, each school and district participated in all of the different core program components. The only element subject to district choice was whether to return the 50% savings to the schools that made them. Given a period of extremely tight school budgets, districts were given the option of whether they would return the savings dollars to schools.

The only changes to the Program were enhancements. For example, in the PG&E area, there were opportunities to do small business audits in the community. In the SCE area, the LPS contractor encouraged networking amongst the participating schools. As such, current GSGC Program schools mentored new GSGC Program schools. The students visited each other's schools and exchanged emails. Another enhancement was that the LPS staff in both service areas provided one-on-one training for those teachers and custodians who were unable to attend the initial professional development workshop or mid-year meeting.

4.1.1.4.1 Teacher and Custodian Satisfaction with Key Program Elements

Teachers and Custodians were asked to rate their satisfaction with key elements of the GSGC Program. The results of this analysis are presented in Exhibit 4.4 and Exhibit 4.5. Again, a four-point scale is used with "Very Satisfied" set equal to 4 and "Very Dissatisfied" set equal to 1. From the results presented below, we see that the overall, participants are satisfied with participating in the GSGC Program. Teachers report an average satisfaction rating of at least 3 or better for nearly every Program component investigated. The area of least satisfaction had to do with the process for implementing the community-based projects through the Student Advisory Council (SAC). This may present one area for further investigation given that the LPS have a different view and report that the strategy for implementing the community-based projects through SAC worked well. Teachers' average satisfaction rating with the overall process for participating in the Program was 3.20.

Exhibit 4.4.
Teachers' Mean Satisfaction Ratings of Key GSGC Program Elements

Question	Mean	N	Std. Error of the Mean
A. The process for developing an energy action plan for my school/district.	3.00	42	0.132
B. The process for working on school teams to implement the energy action plan.	3.00	38	0.151
C. The process for working with either EEPIC or SEI staff to implement the Program.	3.00	41	0.144
D. The quantity of ASE GSGC Program resource materials provided to me by either EEPIC or SEI for incorporating energy education in the classroom.	3.31	42	0.116
E. The quality of the ASE GSGC Program resource materials provided to me by either EEPIC or SEI for incorporating energy education in the classroom.	3.24	42	0.122
F. The process for implementing community-based projects through the Student Advisory Council.	2.78	32	0.147
G. The overall experience for participating in the GSGC Program.	3.20	42	0.157

Custodians also report a moderately high satisfaction rating for the overall experience of participating in the GSGC Program. However, when asked to report their satisfaction with particular elements, these ratings are somewhat lower, especially as it relates to participating on school teams to implement the school action plan. Custodians' average satisfaction rating for this Program element is 2.33.

Exhibit 4.5.
Custodians' Mean Satisfaction Ratings of Key GSGC Program Elements

Question	Mean	N	Std. Error of the Mean
A. The process for developing an energy action plan for my school/district.	2.89	9	0.389
B. The process for working on school teams to implement the energy action plan.	2.33	9	0.408
C. The process for working with either EEPIC or SEI staff to implement the Program.	2.50	8	0.378
D. The quantity of ASE GSGC Program resource materials provided to me by either EEPIC or SEI relating to saving energy at school.	2.75	8	0.412
E. The quality of the ASE GSGC Program resource materials provided to me by either EEPIC or SEI relating to saving energy at school.	2.63	8	0.420
F. The overall experience for participating in the GSGC Program	3.33	9	0.289

4.1.1.5 Professional Development Workshops

The GSGC Program provides professional development training workshops for all teachers and custodians who participate in the Program. At the initial workshop, teachers are introduced to the GSGC materials, are given a resource binder and assisted in planning energy educational activities for the classroom and other GSGC program activities for the school year. Custodians receive resource materials and are encouraged to participate with teachers in terms of encouraging students to engage in energy activities and energy saving behaviors. Also, teachers and custodians are taken on a walk through audit to teach them about potential energy saving behaviors that can be implemented at their school. There is a mid-year meeting where participants are able to network and also make adjustments to their school action plans. The final, year-end meeting provides an opportunity for participants to celebrate their accomplishments as well as hear about the activities that occurred in other schools. The local program staff members work one-on-one with school staff if they are unable to attend the workshop or mid-year meeting.

The ASE bases the success of the workshops on the level of attendance, the completeness of the strand plans developed, and on the workshop evaluation results. (Summary results of GSGC administered workshop evaluations that are completed by participants at the end of the workshop are contained in Appendix E.) LPS also report that the logistics of providing training for teachers and custodians worked well. Impacts resulting from participating in the workshops are presented in Section 4.2.1.

4.1.1.6 Program Materials and Resources

The GSGC Program provides numerous materials to participants, including energy education materials that are correlated to the California curriculum standards so that they support the educational mission of California schools, thus increasing the chances that teachers will use them. The ASE designs the

instructional resources to be integrated in to science, math, language arts, and social studies classes. Topics covered include energy use and energy transformations, measuring energy, energy use in buildings, energy sources such as fossil fuels, insulators, awareness of the environment, water pollution, energy surveys and audits, recycling, and energy efficiency and conservation. As stated previously, local program staff review the materials with the teachers at the initial workshop, and teach them how to effectively use the materials in the classroom.

The Program also provides tool kits for schools to check out and use to aid energy instruction and classroom activities. The contents of the tool kit are shown in Exhibit 4.6.

Exhibit 4.6.
Tool Kit Contents

TOOL	SOURCE	MAKER	MODEL #
Air Velocity Gauge (Also called Pocket-Thermo Anemometer)	Grainger	Extech	45118
Binoculars	None Listed	None Listed	None Listed
Building Stethoscope (Also called Mechanic's Stethoscope)	J.C. Whitney	J.C. Whitney	74X6916B
Carry-All Equipment Carry Case	Professional Equipment	TKL	Mfg# 97002
Data Logger Kit: HOBO H8 Logger for RH/Temp/Light/ External Temp Probe	Onset Computer Corporation	Onset Computer Corporation	Part# H08-004-02
Extension Mirror	Professional Equipment	Interstate	Item # R163
Flicker Checker	None Listed	None Listed	None Listed
Gloves (Light pair)	None Listed	None Listed	None Listed
Infrared Thermometer	Grainger	Raytek	MT4
	Grainger		Alt.
	Grainger		Alt.
Lamps: 15-20 watt spiral 15-20 watt reflector 15-20 watt globe LED exit sign	Home Depot	Commercial Electric Lithonia Lighting (sign)	See SKU Numbers
Light Meter	Grainger	Extech	407026
	Grainger		Alt.
	Grainger		Alt.
Smoke Bottles (2)	Professional Equipment	REGIN	5201
Tape Measure	None Listed	None Listed	None Listed
Temperature and Humidity Meter	Grainger	Extech	445580
Watt Meter	Electronic Education Devices	Watt's Up?	PRO meter

The GSGC Program believes that the tool kits are used most. While the teacher resource binders provide a great deal of information to help plan classroom and other learning activities, and are coordinated with the California curriculum to be more easily incorporated into existing classroom lessons, the Program realizes that it may be difficult to make use of all of this information effectively given the sheer amount of information provided. As such, the hope is to develop strategies that will make using these materials easier for teachers.

The LPS believe that the amount and quality of information provided to teachers was adequate for them to effectively educate students about energy, but are less convinced that the amount of information provided to custodians is adequate for them to effectively participate in the Program.

4.1.1.6.1 Teacher Ratings of Program Resources

Teachers were asked to evaluate the effectiveness of the GSGC Program resources by reporting whether they agreed strongly, agreed somewhat, disagreed somewhat, or disagreed strongly with a series of statements pertaining the materials they received. The teachers' responses were converted to a four-point scale with "Agree Strongly" set equal to four and "Disagree Strongly" set equal to one (i.e., the higher the score, the greater the agreement). The results for each question are summarized in Exhibit 4.7.

Of those surveyed, all but one indicated that they received some type of program materials. Overall, teachers had favorable ratings of the resources provided by the Program, emphasizing that the materials were both credible and easy to understand.

Exhibit 4.7.
Teachers' Mean Ratings of the GSGC Program Resources and Materials

Question	Mean	N	Std. Error of the Mean
A. The information in the resource material was presented in an engaging format.	3.25	40	0.112
B. The information in the resource material was easy to understand.	3.33	40	0.115
C. The information in the resource material was credible.	3.55	38	0.117
D. The information in the resource material was useful for incorporating energy education in the classroom.	3.23	40	0.121
E. Sufficient information was provided in the resource material to help me develop classroom activities/school-based projects that focused on energy.	3.25	40	0.123
F. I shared the resource materials with other teachers who were NOT participating in the Program.	2.69	39	0.177

4.1.1.6.2 Sharing Program Resources with Non -Participants

The Program also provides its Program resources on the ASE website. While the scope of this evaluation did not allow the evaluation team opportunity to investigate the extent to which these materials are being used, presumably, this permits both participants and non-participants access to the

Program information. Non-participants are also indirectly impacted through outreach activities that are directed to the entire school community. This means that the GSGC Program reaches more than just those teachers who are directly involved in the Program and their students. These activities may occur at Back-to-School meetings, and other school and district-wide meetings or even through outreach to the greater community.

While sharing resources with non-participants was not a specific program objective, we investigated whether there was any evidence to support that the resources were being shared with non-participants. Specifically, teachers were asked to indicate whether they agreed that they shared GSGC resources with other colleagues or teachers, who were not participating in the Program, and the average rating was 2.65, as shown in Exhibit 4.7.

However, of those who indicated that they did share resources with others, nearly 79 percent report that they shared resources with 6 or fewer teachers, as shown in Exhibit 4.8. While one teacher indicated that they shared resources with approximately 60 teachers, this does not seem to be the normal occurrence.

Exhibit 4.8.
Number of Colleagues With Whom You Shared GSGC Resources

Number of Teachers with whom You Shared Resources	Frequency	Percent	Cumulative Percent
0	2	10.5	10.5
1	5	26.3	36.8
3	5	26.3	63.2
5	1	5.3	68.4
6	2	10.5	78.9
10	1	5.3	84.2
15	1	5.3	89.5
20	1	5.3	94.7
60	1	5.3	100
Total	19	100	
Refused	23		

4.1.1.7 School Action Plans

Teachers work with the local program staff to develop "strand plans" that detail the energy activities that they will engage in at their school and in their local community during each month of the school year. The plans consist of five key components: 1) instruction (integrating energy into instruction); 2) action (saving energy in school); 3) school involvement (involving the whole school community in saving energy); 4) residential and community involvement (taking the energy message home and into the community); and 5) custodial involvement (involving the custodian and facilities staff in saving energy). Activities may include using lessons from the instructional resource binder, conducting school and home surveys,

developing an environmental website, planting trees, writing articles, having guest speakers, making student presentations, instituting recycling programs, and many more.

The initial school action plans are developed at the professional development workshop given at the beginning of the year. New plans are developed at the mid-year meeting to map out activities for the second part of the year. These new plans build on those developed at the professional development workshop at the beginning of the year and upon information and knowledge obtained by participating in the Program during the first half of the year. The GSGC staff work with the school staff in the interim to implement the planned activities. The Program makes recommendations to the schools for no-cost behavioral and operations changes and schools work to implement these recommendations throughout the school year. The extent to which schools implemented recommendations is tracked in the monthly reports.

The LPS indicate that the energy action plans provide concrete steps for schools to reduce energy, but there is mixed opinion regarding whether the recommendations of no-cost behavioral and operations changes were effectively identified. As indicated previously, custodians reported that they were somewhat dissatisfied with the process for developing these plans and working with school teams to implement the school action plan. The Program may benefit by investigating solutions to make the process more satisfying for custodians.

When schools save energy as a result of the Program activities, the districts may give back a portion of the dollar savings to the school that earned them. While this is a key element marketed by the Program, the ASE reports that a few of the districts throughout the state returned savings to schools and, in one case in the SCE service area (the Hesperia School District), the district actually returned dollar savings to schools on a monthly basis.

4.1.1.8 Student Advisory Council

A core component of the program is the Student Advisory Council (SAC), which are integrally involved in the process for implementing the school action plan and carrying out the community based projects. Students engage in activities such as conducting audits at local businesses, applying school lessons at home, distributing energy efficiency information at school functions, sponsoring energy efficiency project displays at the science fair, making presentations to the School Board, establishing partnerships with local businesses and institutions to save energy, and making presentations about energy efficiency and conservation at meeting of the local Chambers of Commerce. In the 2002-2003 Program, students in the SCE area made presentations to both the traditional and the Hispanic Kiwanis Clubs in Rialto. In the PG&E area, elementary students worked with residents of a retirement home to encourage them to save energy in their units.

4.1.1.9 STEM Program

The GSGC also uses the Savings Through Energy Management (STEM) Program offered by Wilson Educational Services Inc. STEM is a three-to-five-day program for a group of students in grades 7-12 and their teacher. The school's custodian and an administrator are welcome to participate as well. The STEM instructor teaches participants to recognize real energy problems in the school, to identify appropriate and cost-effective solutions to the problems, to gather all data, to calculate the savings in fuel and dollar units and to present the information effectively. This program enhances important skills in

science, math, and language. It includes a rigorous final exam (all word problems) and a written report that the STEM team may present to the school/district administrators or at the year-end GSGC meeting. The STEM program was offered in three (3) middle schools and seven (7) high schools; there were 193 students and 10 teachers who participated. Exhibit 4.9 summarizes the participant information for the PG&E and SCE territories.

Exhibit 4.9
STEM Program Summary

School Name	Program Dates		# Students	# Teachers
	Start	End		
Ambassador Christian High School (SCE)	10/7/02	11/15/02	22	1
San Gorgonio High School (SCE)	10/8/02	11/19/02	19	1
Sultana High School (SCE)	10/1/02	11/14/02	24	1
Serrano Middle School (SCE)	10/9/02	11/18/02	19	1
Hesperia High School (SCE)	2/2/04	2/24/04	12	1
Hesperia Middle School (SCE)	2/4/04	2/26/04	26	1
Jehue Middle School (SCE)	2/6/04	2/24/04	26	1
Analy High School (PG&E)	11/3/03	12/9/03	11	1
El Molino High School (PG&E)	11/4/03	12/8/03	11	1
Montgomery High School (PG&E)	2/2/04	3/10/04	23	1

4.1.1.10 Organizational Collaboration

The Program collaborates with various outside groups including institutions and other organizations to further enhance the success of the Program. For example, the Program collaborated with PG&E and SCE to receive technical resources and information and spoke with utility representatives about technical aspects. High School students toured SCE's Customer Technology Application Center (CTAC), the Utility's technical demonstration facility, and the Program collaborated with a hospital in Redmond by working with facility staff at the hospital to learn about how they saved energy and to share information about how students saved energy at school. Other examples include:

- Redlands High School worked with the heart foundation at a local hospital; students learned about energy use in the hospital and gave them information on how they could save on energy both at home and in their facilities.
- EEPIC, the GSGC local program staff contractor in the SCE area was asked by the city of Rialto to distribute information at the Route 66 Festival on how to save energy.
- Green Schools is partnering with ICLIE, an international climate change organization in Sonoma County that is active in all cities in the county. ICLIE Sonoma County has agreed to put information on their website about Green Schools, including the individual schools' energy savings to date so that each school can see how the others are doing.

The LPS are primarily responsible for carrying out these tasks within each utility service area. When asked about the amount of collaboration required as part of their scope of work, and whether this collaboration led to information sharing, there were mixed perceptions about these issues. While there is some disagreement that the amount of collaboration required is about right and that the collaboration leads to information sharing, other staff feel that the amount of collaboration is about right and that it leads to some sharing of information, resources, and contacts.

4.1.2 Information Flow and Quality Control

4.1.2.1 Communication Effectiveness

All GSGC Program communications are managed through the ASE and the staff engage in frequent communications regarding implementation of the Program. The local program staff (LPS) are given the program implementation plan so they will know what to expect of the Program, and the ASE Program liaison works closely with the LPS in terms of reviewing monthly reporting templates to ensure that the project deliverables are being met. The Program liaison also communicates with the LPS to provide instructions regarding workshops and meetings and to ensure that the staff have the current, necessary information to provide to participants and estimates that approximately 25% of work time is spent communicating about the Program.

LPS agree that communications regarding the day-to-day operations of the Program, GSGC meetings and workshops worked well, provided current information about the Program and required the right about of time. While the ASE Program staff felt that communications between GSGC staff at all levels worked well, the perceptions of the LPS were more mixed. Some LPS felt that were some significant bottlenecks in the flow of information, that communications regarding their deliverables to the ASE

could be improved, and that better communications would have prepared them to more effectively implement the GSGC Program.

In the future, the Program hopes to improve communications by giving LPS a better sense of the "big picture". The intent is to give these staff members more understanding of how information requested impacts the Program. The hope also is to do more to keep participants better informed by continually making information available to participants at the various meetings and workshops. Additionally, they will be less likely to assume that participants have all of the required information, but will take specific steps to make the materials and information available. The ASE also hopes to follow up better after workshops and at key stages of the program. This will allow for better monitoring without micro managing.

4.1.2.2 Staff Training

The ASE provides training to the GSGC staff, including the contractors working as LPS, prior to their beginning the Program and continues with this support through ongoing communications. Specifically the ASE sponsors a retreat for all GSGC staff to review relevant information for the current program. For example, in fall 2003, the ASE reviewed the program and implementation theory models developed in the Phase I evaluation study with the LPS to inform them about the models and to get feedback. At this retreat, the GSGC staff also have opportunity to begin planning for the year's activities.

The Local Program staff who attended the retreat felt fairly strongly that, at the orientation workshop, they were sufficiently informed about program goals, had an adequate review of the GSGC resources and had adequate time to plan activities relating to the current program year. They also believed that the session provided them with sufficient orientation and/or training to conduct the professional development workshops with participants and to effectively carry out their scope of work for the GSGC Program.

4.1.3 Baseline and Energy Use Tracking

A core program component is to offer baseline and energy use tracking to schools during the school year. The Program uses the information collected to estimate the savings made by schools as a result of making no-cost behavioral and operations changes. Within the GSGC program, energy savings are based on calibrated EZ Sim files using billing data from the schools and nearby weather data. EZ Sim[15] is an Excel-based bin-method computer simulation model that uses the average daily temperature along with building characteristics and operating conditions to determine energy use. The program analyst obtains the building characteristics and operating conditions either over the phone or during an onsite visit. According to the analyst, this is considered an order of magnitude type of work, not an engineering analysis, as he is not an engineer. However, when anomalies appear, he attempts to track them down

[15] From the marketing on the EZ Sim website: "EZ Sim is the next step in energy accounting. It uses actual utility bills to reveal the patterns of use in commercial buildings. EZ Sim is a quick spreadsheet tool that is equivalent to a sophisticated engineering analysis. It's designed for resource conservation managers and facility operators. You don't have to be an engineer to use it. EZ Sim uses actual energy bills and available information to reveal the patterns of energy use in a building. So, the cost to operate EZ Sim is almost nothing. EZ Sim lets you use utility bills to calibrate a simulation of a commercial building in an interactive graphic window. Once it matches the building's utility bills, the simulation model can provide reliable estimates of potential conservation savings. So, you have assurance that the savings estimates are realistic." http://www.ezsim.com

and make appropriate adjustments to the model. The building model has default values for many of the variables that can be kept or changed as needed.

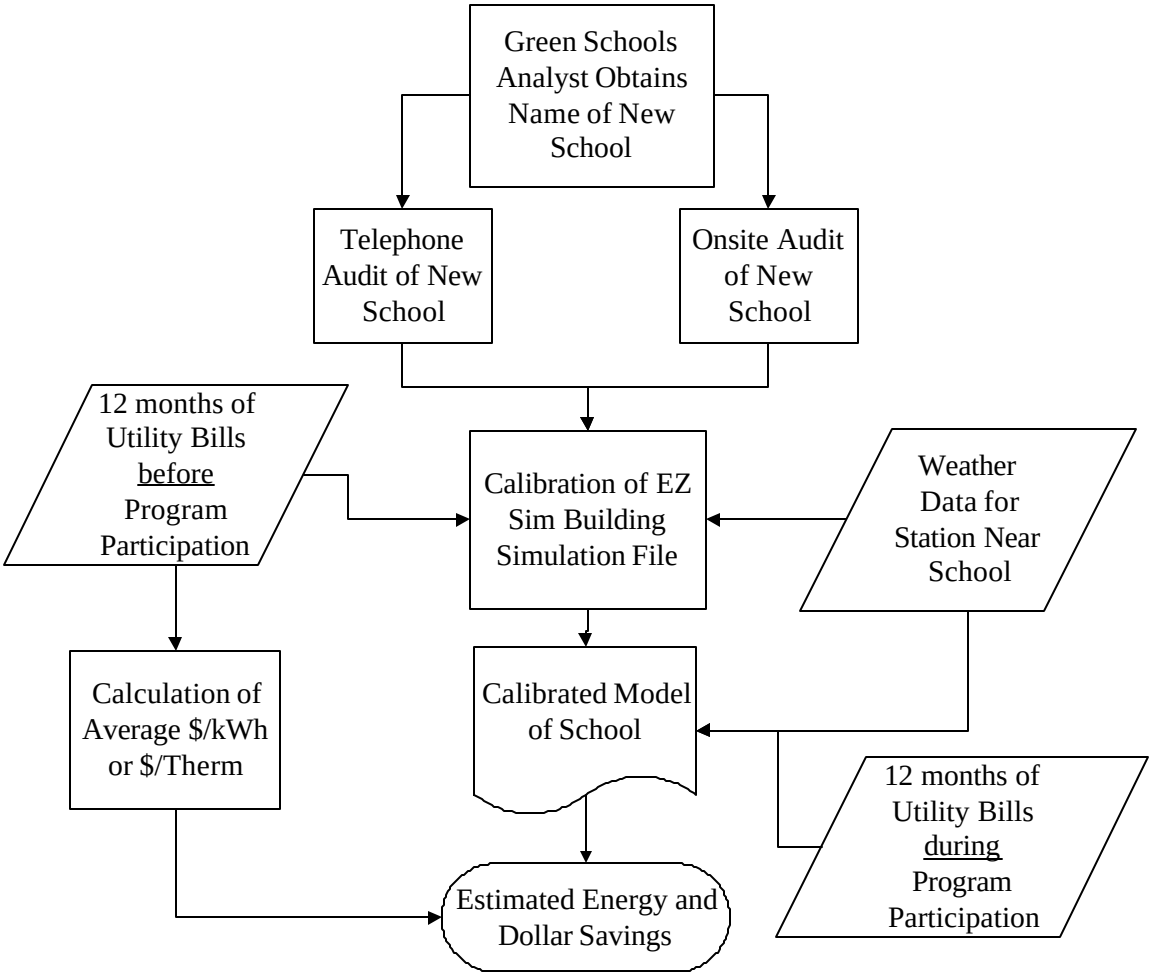
Once building characteristics and operating conditions are input, the analyst can change various parameters within the model to best match the actual energy use as provided by the utility bills. For this program, the simulation files are calibrated to within 5% of the annual electrical energy use. This means that the monthly usage may vary between the actual and modeled use, but across 12 months of use, the simulated total energy use is ±5% of the actual total energy use.

The calibration of the building occurs with weather and energy use data that is prior to any program implemented changes. After the schools had implemented changes over an extended period of time, the analyst keeps all the parameters within the model the same, but adds weather data for the period of time that corresponds to the program implementation period. The model then provides an updated energy use called the baseline that is then compared to the actual utility use to estimate energy savings.

The utility bills provide both the energy use and cost per month. The program analyst determines an average cost per month by dividing the total monthly cost by the monthly kWh (or therm) used. An annual average cost is then calculated using the monthly values.

The monthly estimated energy savings from the comparison between the baseline and current usage are multiplied by the annual average cost to calculate a monthly monetary savings. This information is then provided to the district. This process is shown graphically in Exhibit 4.10.

Exhibit 4.10
Process for Energy Savings Estimate



Analysis of Energy Saving Estimate Process

There are multiple questions that need to be answered in our review of the method used to estimate the energy savings resulting from the behavioral changes promoted by the Program. Thoroughly answering some of these questions was beyond the purview of this evaluation due to budget constraints. However, starting from the beginning of the process and moving to the end, relevant questions are:

1. Is the quality of the data obtained over a telephone interview sufficient to adequately capture the building characteristics and operating conditions?
2. Are there differences in the quality of the inputs between telephone and onsite surveys?
3. What types of changes to the model were required to obtain a calibrated model and how good was the fit?
4. How robust is the calibration of the model?
5. Is the school site in a microclimate that is vastly different from the location in which weather data is collected?

6. Is the average $/kWh or $/therm the correct value to use to estimate monetary savings?
7. Was there anything else that may have occurred at the school that could affect energy use during the period of time designated as "during-participation"?
8. Does the model appropriately cover the pre- and post-participation periods?
9. What is the range of energy savings that is possible from behavioral changes?
10. Are schools that are not participating in the GSGC program making changes that also produce reductions in energy use?

The evaluation team assessed these questions to provide the program with feedback on this component. Each question is provided next, followed by the results of the analysis.

***Q1 and Q2**: Is the quality of the data obtained over a telephone interview sufficient to adequately capture the building characteristics and operating conditions? AND Are there differences in the quality of the inputs between telephone and onsite surveys?*

These two questions are grouped together because of their similarity. The evaluation team reviewed the needs of an EZ Sim model to provide a judgment on whether a telephone survey was adequate for data collection on a site. For this Program, all the PG&E schools had a telephone audit and 20% of the SCE schools had data collected over the telephone.

The model has a mix of aggregate and detailed input choices. For example, there are few choices on the building materials (i.e., wood frame, cement block, masonry, and high rise) and no ability to zone different portions of a building. However, the analyst can change the U-value[16] of the building walls or roof, roof absorptivity, window and wall percentage, or external shade factor. These details would be difficult, although not impossible, to obtain over the phone. Based on our experience, there are inherent differences in data obtained over the phone versus from an onsite audit. While the model provides default values for each of these pieces of information based on the building type, these data affect the calibration of the model.

Because the program participants use the information from this model as a means to determine monetary exchanges between the district and schools, and ASE uses these data in the marketing of the Program, the model should be as accurate as possible. While a telephone survey would be sufficient for a high level analysis and calibration of the model, it is the opinion of the evaluation team that input data for the EZ Sim model should be obtained from an onsite audit performed by a technical analyst or engineer that thoroughly understands the EZ Sim model.

[16] The U-value is the overall coefficient of the thermal transmittance of a construction assembly in Btu/(hr ft^2 °F).

***Q3**: What types of changes to the model were required to obtain a calibrated model and how good was the fit?*

As indicated in the EZ Sim manual:

> "Tuning a model is somewhat of an art. The tuning factors can react in different ways that all provide reasonable fit to data points. (p.14)"

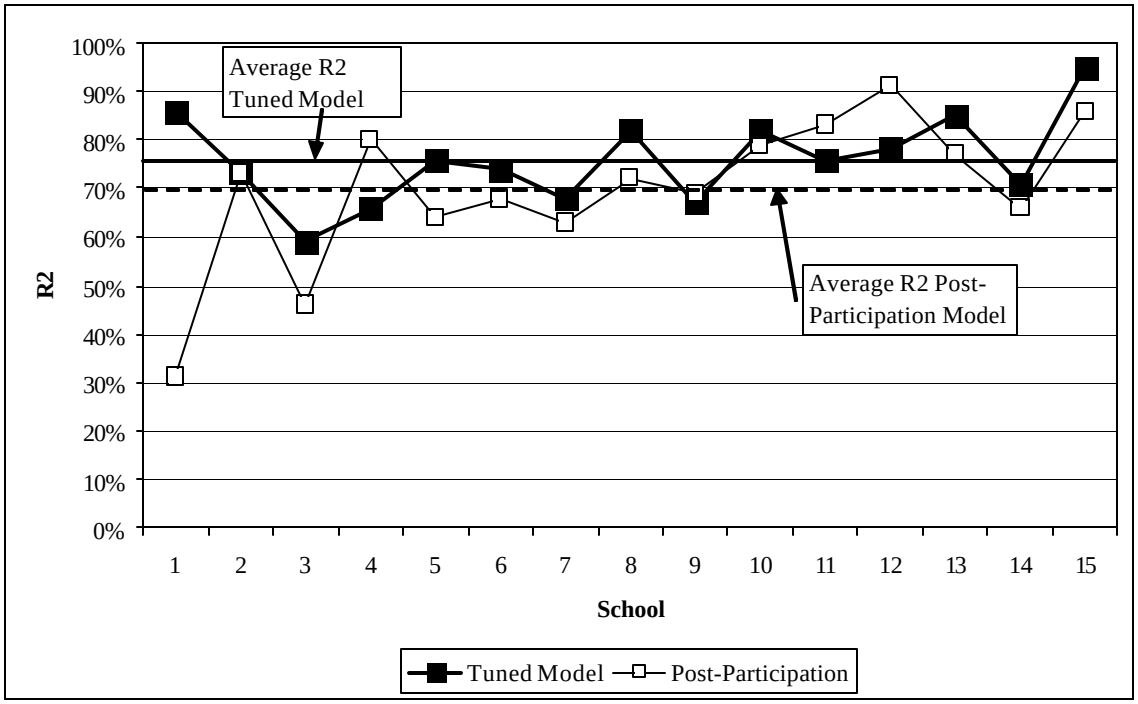
Tuning the EZ Sim model to utility data consists of changing high level factors on base loads, cooling effectiveness, heating use, ventilation air changes per hour, balance point and temperature adjustments, and adjusting base loads and other process loads. After these high level factors are adjusted, the analyst can go into the detailed description and make fine-tune adjustments such as internal gains, plug loads, or cooling efficiency. The software provides an electric and gas bias value[17] and an R^2 value[18] for the tuned model as well as the model with a second year of data. According to the EZ Sim manual, a "good" fit can be considered one in which the bias values are as close as possible to zero and the R^2 value is as close to 100% as possible. As shown in Exhibit 4.11, the R^2 values for the GSGC sites assessed by the evaluation team ranged from 59% to 95% for the tuned model (i.e., the model before behavioral changes at the school) and have an average of 76%. The post-participation model (i.e., the model during the period that the behavioral changes were taking place) R^2 average was 70%. The gas bias values on the tuned model were highly varied (from -30% to 30%), but the electric bias values had a much smaller spread (from 1% to 19%).

[17] Bias is determined as the sum of the differences between the monthly modeled and billed demand per square foot –

$$\text{Bias} = \sum_{1}^{12} \frac{\text{Watts}}{\text{ft}^2}_{n\ \text{modeled}} - \frac{\text{Watts}}{\text{ft}^2}_{n\ \text{billed}}$$

[18] R^2 is the measure of the fit of the modeled data to the actual data. A value of 1.0 is a perfect fit.

Exhibit 4.11
R2 Values from EZ Sim Models by School



Changes were made in most of the high level factors to obtain the results shown above, although the changes varied by school. There were also changes to the occupied hours and heating and cooling efficiencies. This is to be expected, as the default values in the original model will fit each school differently. The post-participation model R^2 fits tended to be lower than the tuned model, suggesting that the model does not always fully capture the building and operating characteristics.

***Q4**: How robust is the calibration of the model?*

A model can be considered robust if small changes to the inputs make only small changes to the outputs. For this program, if the model of a school were calibrated to a slightly different gas and electric bias and R^2 value, what type of ramifications are there for the potential savings indicated? The robustness of this step in the process speaks to the likelihood for variation in the potential savings.

To test the potential variation possible, the evaluation team used an existing school input file and calibrated it to new adjustment factors. While the R^2 and gas bias value were improved, the electric bias value was lower than the original file. (Based on the algorithm for determining bias, a negative value means that the model underestimates the billed energy use.)

Exhibit 4.12
Differences in Input Files to Estimate Possible Variance in Results

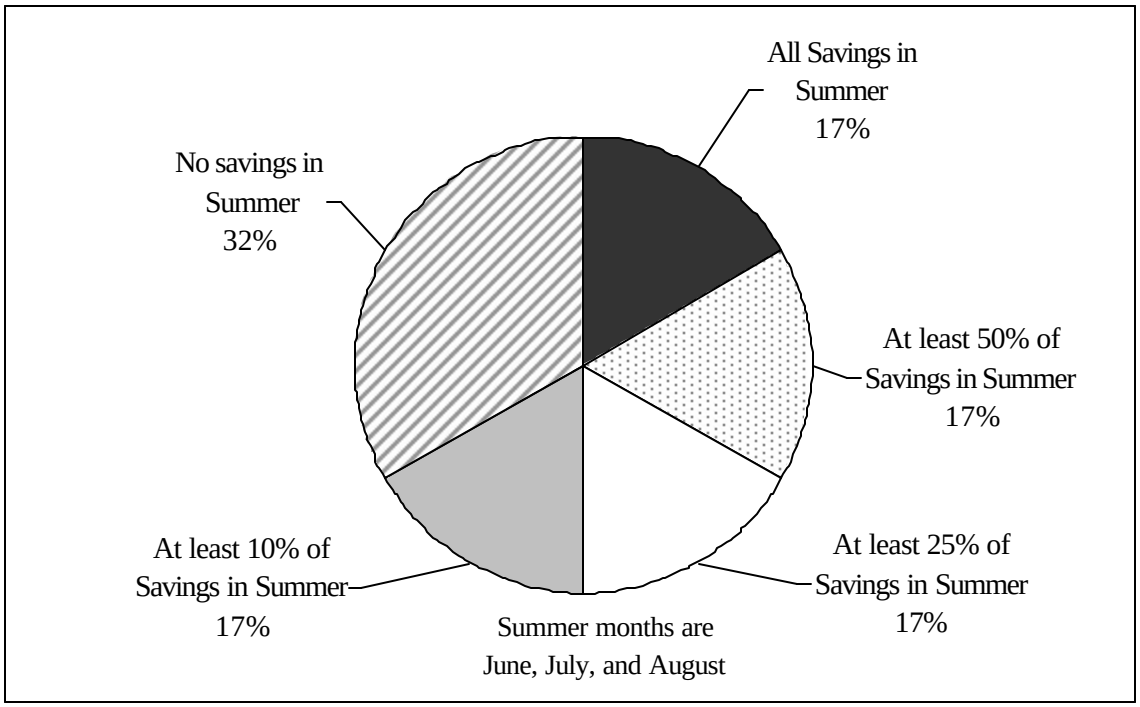
Parameter	Program File	Evaluation Team File
Heating Use Factor	1.7	1.56
Base Loads	0.28	0.28
Ventilation ACH	0.25	0.57
Cooling Effectiveness	0.78	0.78
Balance Point, % solar area	0.24	0.24
Tuned Gas Bias	-5%	-2%
Tuned Elec. Bias	1%	-6%
Tuned R^2	71%	75%
Post Gas Bias	18%	22%
Post Elec. Bias	1%	-5%
Post R^2	66%	71%
Annual kWh Estimate Savings	5,727	-43,696

Using the R^2 and bias values as a calibration mechanism, both files appear to be acceptable. However, the large difference between the annual kWh estimated savings indicates that even a small difference in some of the parameters can cause swings in the model. Are the changes made by the evaluation team appropriate? It cannot be determined from the available information. The sole purpose of the data in Exhibit 4.12 is to show the potential for variance in an estimated annual savings value.

A second approach was used in attempting to determine the robustness of the model. There were twelve schools with 12 months of current-participation billing data in the EZ Sim models provided to the evaluation team.[19] The monthly estimated savings were pulled from the EZ Sim input files (commissioning report) and analyzed in Excel. Summer months were considered June, July, and August. It is possible that some of these schools were year-round, but the evaluation team had no data on the school schedules so it was assumed that the schools had no students in the summer months. As shown in Exhibit 4.13, for 32% of the schools, all the annual savings were outside of the summer months, and for 34% of the schools, all or more than half of the estimated annual savings were within this three-month period. As the savings are due to behavioral changes, it seems odd that some schools had the all or a majority of savings during months when there were few to no students present at the school.

[19] Of the 15 schools indicated in Exhibit 4.11, two did not have a full 12 months current participation data and one had an estimated savings of 42% of the total billed usage which was considered too high to be due to behavioral changes and therefore not included in this analysis.

Exhibit 4.13
Savings in Summer Months



The evaluation team was unable to follow up with any of the schools due to resource constraints and acknowledges that the data presented in Exhibit 4.13 may have reasonable explanations for the spread shown. However, based on this analysis, the evaluation team believes that the results from the model can be changed by making reasonable changes to input parameters. Also, there is the likelihood that the annual savings can mask potential difficulties with the calibration such that the summer months are indicating a disproportionate percentage of the savings. Any reporting/documenting of potential energy savings should indicate that the energy savings, while they are based on a calibrated simulation model, have not been rigorously verified and actual savings may be substantially different from the estimated savings provided by the model.

Q5. *Is the school site in a microclimate that is vastly different from the weather data location?*

This problem is inherent in many computer simulation models and is difficult to address without site-specific weather data. For California, there are many microclimates. As an example, San Francisco is quite close to Oakland but has quite different summer time temperatures and solar gains due to fog. For those sites with EZ Sim input data, the evaluation team researched the locations of the schools and compared them to the long term average weather in the weather data file. (The weather file provides both daily average temperatures and typical long-term monthly average temperatures. The daily values were not analyzed.)

For those sites investigated there were three main school districts – Rialto, Hesperia, and Petaluma. Latitude and average temperature statistics are shown in Exhibit 4.14 for the weather file used in the EZ Sim model and as provided on the Internet (http://www.city-data.com/city) for the three cities.

Exhibit 4.14
Weather Parameters at Weather Station and Local City

Weather Parameters	Rialto USD		Hesperia USD		Petaluma USD	
	Redlands Weather Site	City of Rialto	Victorville Weather Site	City of Hesperia	Santa Rosa Weather File	City of Petaluma
Latitude	33.6	34.1	34.3	34.4	37.6	38.2
Avg Annual Temp	64.6	65.7	64.1	60.0	59.0	58.6
Avg Min Temp	52.7	54.6	43.5	44.6	48.9	47.9
Avg Max Temp	78.6	79.3	87.3	77.6	67.9	67.6

Both Rialto and Petaluma look like a good fit. The evaluation team expects that the weather data at these sites would most likely provide an accurate representation of the actual weather at the school. The Hesperia site appears to be less of a good fit. Looking at the monthly data from the weather site and the city indicated that the Victorville data was slightly warmer in the winter than Hesperia (e.g. the average monthly temperature in Victorville was 2 degrees warmer in February, but almost identical in January) and much warmer in the summer months (e.g., Victorville was 13.1 degrees warmer on average in October and 6.2 degrees warmer in November). While this is a comparison of "typical" average monthly temperatures, it is assumed that average daily temperatures from years used within the EZ Sim model would show similar differences.

Because weather stations are not available in all locations and with the type of information required by the EZ Sim model, there is most likely no ability to ameliorate the differences between Victorville and Hesperia or other sites that may have this problem. The difficulty for the Program with this type of situation arises when the calibration year is relatively cool and the model is tuned to weather that may be similar between the two sites. However, if the following year reverts back to more typical temperatures and the school shows more energy use than the model expects (because it is cooler at the school than the Victorville temperature), any conservation brought about by behavioral changes at the school may not show up at all. As indicated, this difficulty may not be able to be solved, but it should be acknowledged.

***Q6**: Is the average $/kWh or $/therm the correct value to use to estimate monetary savings?*

This next question moves away from the engineering model and looks at the process used to calculate monetary savings from the program. The Program currently obtains energy use data from the utilities after obtaining a third party authorization from the school to access the school's bills. According to the program analyst, if the school is quick, this authorization can be obtained within a month. However, there have been sites that took substantially longer (up to 14 months). Once the authorization is set up, it is a 1-2 week time period to obtain the data from the utility. But, due to the billing and data input cycles

within the utilities, the monthly data is 4-7 weeks behind the current timing. As a process, then, it can become unwieldy and slow. Because of this timeline, there is little to no ability to provide *timely* feedback to the school on potential savings, even if the Program analyst desired to do so.

Aside from the process to obtain the data, as discussed previously, the $/kWh or $/therm rate applied to the energy savings from EZ Sim are calculated from the total bill for a month divided by the total energy use. As the bill includes a meter charge and possibly demand charges, the actual cost to the school for energy use is embedded within the total cost. These types of base costs are not reduced through energy conservation. Additionally, rates may rise just at the period that conservation is occurring, resulting in higher dollar savings for that month's conservation. An example is provided in Exhibit 4.15.

Exhibit 4.15
Example of Rate Differences and Dollar Savings

Electricity

	Energy Baseline **kWh**	Energy Use Current **kWh**	Energy Savings **kWh**	Energy Savings **%**	Average Energy Cost* **($ per kWh)**		Monthly Dollar Savings **$**	
					Average	Monthly	Using Avg $/kWh	Using Monthly $/kWh
Oct-02	78,897	85,550	(6,653)	-8%	0.1509	0.173	$ (1,004)	$ (1,152.44)
Nov-02	89,381	91,546	(2,165)	-2%	0.1509	0.120	$ (327)	$ (259.05)
Dec-02	87,237	90,237	(3,000)	-3%	0.1509	0.120	$ (453)	$ (359.35)
Jan-03	88,334	86,654	1,680	2%	0.1509	0.120	$ 253	$ 201.41
Feb-03	89,085	85,588	3,497	4%	0.1509	0.120	$ 528	$ 419.72
Mar-03	78,235	96,447	(18,212)	-23%	0.1509	0.120	$ (2,748)	$ (2,177.36)
Apr-03	90,945	85,615	5,330	6%	0.1509	0.144	$ 804	$ 768.00
May-03	78,280	87,163	(8,883)	-11%	0.1509	0.192	$ (1,340)	$ (1,701.54)
Jun-03	61,241	37,377	23,864	39%	0.1509	0.228	$ 3,600	$ 5,434.54
Jul-03	62,003	35,849	26,154	42%	0.1509	0.231	$ 3,946	$ 6,038.54
Aug-03	64,858	73,693	(8,835)	-14%	0.1509	0.197	$ (1,333)	$ (1,739.58)
TOTAL	868,496	855,719	12,777	1%	0.1509	0.1509	$ 1,928	$ 5,473

Natural Gas

	Energy Baseline **Therms**	Energy Use Current **Therms**	Energy Savings **Therms**	Energy Savings **%**	Average Energy Cost* **$ per Therm**		Monthly Dollar Savings **$**	
					Average	Monthly	Using Avg $/Therm	Using Monthly $/Therm
Oct-02	9,959	11,485	(1,526)	-15%	0.2199	0.1794	$ (336)	$ (273.67)
Nov-02	13,299	13,679	(380)	-3%	0.2199	0.2064	$ (84)	$ (78.43)
Dec-02	17,460	9,929	7,531	43%	0.2199	0.2318	$ 1,656	$ 1,745.99
Jan-03	14,810	17,986	(3,176)	-21%	0.2199	0.2304	$ (698)	$ (731.80)
Feb-03	11,843	15,257	(3,414)	-29%	0.2199	0.2361	$ (751)	$ (805.89)
Mar-03	10,819	11,689	(870)	-8%	0.2199	0.2346	$ (191)	$ (204.00)
Apr-03	10,089	11,653	(1,564)	-16%	0.2199	0.2024	$ (344)	$ (316.65)
May-03	5,983	5,026	957	16%	0.2199	0.2453	$ 210	$ 234.77
Jun-03	9,027	4,045	4,982	55%	0.2199	0.2459	$ 1,096	$ 1,225.24
TOTAL	103,289	100,749	2,540	2%	0.2199	0.2209	$ 559	$ 796

*Total averages are weighted by monthly energy use

The baseline, current use, savings, average cost, and monthly dollar savings shown above in white were provided to the evaluation team. The evaluation team added the gray columns using rate data provided by the program. As seen in this one example, the use of actual $/energy use values changes the overall total dollar savings– substantially in the case of electricity.

Q7: *What else may have occurred at the school that could change energy in the period of time designated as "during-participation"?*

There are many reasons why energy use may vary from year to year. Possibly the school installed needed portables that added to the overall load. Perhaps they shut down certain areas of a school campus for renovation or took advantage of energy efficiency lighting retrofits, thus reducing the load. The school may have recently started a push towards intervention with low-achieving students, causing some classrooms to be used before and after school at a higher rate than previously. In these times of school budget crises, the school may have greatly reduced the extra-curricular activities or classes such as band and music (one Northern California school currently plans to eliminate all their music and athletic activities and shut down their libraries). The point being that there are a myriad of reasons why there will be variations among energy use from year to year. The EZ Sim model could handle some of these changes if follow-up audits are performed and addressed within the model. However, the current program does not include this type of data gathering or application within the energy savings model.

Q8: *Does the model appropriately cover the pre- and current-participation periods?*

An adjunct to the previous question is whether the process is in place to appropriately include the pre- and current-participation periods in the EZ Sim model. As there will be ramp-up periods in which the behavioral changes are not yet occurring within a school year, there should be communication between the Program technical analyst and the schools as to when actions within the GSGC program are being implemented. Based on the conversation with the GSGC analyst, this process is not in place.

Looking at the provided input files seems to confirm this as the savings are based on a complete school year and seem to assume a similar amount of effort throughout the year. For example, it is highly likely that the teacher and students may make a big conservation push during a one or two month period and then other activities of school, such as testing, force them to cut back on their initial effort. While the custodians may maintain their effort, it may produce a relatively small effect. Additionally, a few of the files cross multiple school years. It is questionable that all behavioral changes persist from one year to the next.

Exhibit 4.16
Pre- and Current-Participation Periods

School	Pre-Participation		Current-Participation	
	From	To	From	To
1	Sep-00	Aug-01	Sep-02	Aug-03
2	Oct-00	Sep-01	Sep-02	Aug-03
3	Nov-01	Oct-02	Nov-02	Oct-03
4	Oct-00	Sep-01	Sep-02	Aug-03
5	Mar-02	Feb-03	Mar-03	Feb-04
6	Aug-01	Jul-02	Aug-02	Jul-03
7	Oct-00	Sep-01	Oct-02	Sep-03
8	Oct-00	Sep-01	Oct-02	Sep-03
9	Mar-02	Feb-03	Mar-03	Dec-03
10	Aug-01	Jul-02	Aug-02	Jul-03
11	Oct-00	Sep-01	Oct-02	Sep-03
12	Oct-00	Sep-01	Oct-02	Sep-03
13	Aug-01	Jul-02	Aug-02	Jul-03
14	Mar-02	Feb-03	Mar-03	Feb-04
15	Oct-00	Sep-01	Oct-02	Sep-03

=Covers more than 1 school year

Q9: *What is the range of energy savings that is possible from behavioral changes?*

The literature search revealed little in the way of evaluations of energy impacts due to education and conservation. The few items found tended to cover residential settings. There was one document that covered school-based behavioral changes and only two that covered a commercial setting (but used adults as the impetus for changes). One useful paper provided the distillation of a literature search of 80 documents (Green, 2000). Of the 17 studies with energy impacts from educational actions reviewed in this paper, the range of energy savings varied from 0% to 12%. A low income energy education program (Morgan, 1999) found a 2%-3% net difference between homes with occupants that had been provided energy education and those who had not. An energy-awareness campaign to encourage people to turn off their computer monitors in a government building was stated to produce a 14% reduction in the computer energy use (Chvala, 1995). The Chvala study gave no indication of what percentage this would be on the overall energy bill. The other commercial document documented an intervention to decrease natural gas usage by changing behaviors in an office building. This study indicated a 6% reduction (Staats, 2000) in gas use over the 2 years of the program. The one school specific study indicated that savings in two European schools due to behavioral changes were up to 15% in one school and 7%-10% in another school. However, the actual method used to determine these values was not available to the evaluation team (the bibliography showed these studies to be written in German).

Based on the studies found through this search, a reasonable range of energy savings from behavioral changes in a school setting may be on the order of 0% to 15% with 15% possibly being a bit high. What these values seem to indicate is that sustained behavioral conservation changes can reduce the utility bill less than 15%. Therefore, when the modeled schools indicate an annual savings of 3% to 5%, but the monthly bills show anywhere from a monthly energy increase of 23% to a monthly reduction of 45% within the same year, it most likely indicates that the model is not properly mapping to the weather file or some major changes occurred in the school. In one instance of a major change, the GSGC technical analyst did follow up with a school that was appearing to save an extraordinary level of energy. As it turned out, the school site turned off their air conditioners at the main switch and reduced the lighting to a minimal load and may have saved a larger percentage than expected. However, this type of change is probably rare. A more rigorous process should be used where the monthly savings are looked at critically and large variations identified and explained.

Q10: *Are schools that are not participating in the GSGC program making changes that also engender energy reductions?*

This question is a broad look at what type of change is actually engendered by the program. Can GSGC take credit for any behavioral changes and potential energy savings? While this evaluation has looked at self-reported changes in behavior due to participation in the program, there was no ability to survey schools that were not within the program (non-participants) to see what type of changes, if any, their school staff may be implementing. If those non-participant schools were implementing changes, why were they doing so? Because the GSGC is considered an information-only program, there is no requirement to estimate a net-to-gross ratio (NTGR). However, we note that the current default NTGR for non-residential audits is 0.83 (Energy Efficiency Policy Manual, 2001). This suggests that 17 percent of any savings would have happened in the absence of the GSGC.

4.2 Impact Results

Teachers and custodians were surveyed about the information impacts of the Program as it relates to changes in attitudes, awareness, and knowledge of energy efficiency as well as whether students, teachers, and custodians implemented behavioral and operations changes as a result of participating in the Program. The results of this analysis are presented below. As indicated previously, the evaluation team was unable to obtain individual student pre-and post-test results for the STEM program and therefore could not report the impacts of that element of the Program.

4.2.1 Changes in Attitudes, Awareness, and Knowledge

Exhibit 4.17 summarizes the results of teachers' responses to a series of questions regarding the impact of the information received while participating in the GSGC Program. Again, while not a definitive test of the implementation and program theories, the results seem to provide evidence in support of the model. Teachers report that participating in the Program affected both them and their students and that their attitudes, awareness, and knowledge of energy efficiency and ways to save energy were also positively affected.

Exhibit 4.17
Teachers' Reported Informational Impacts

Question	Mean	N	Std. Error of the Mean
The training workshop increased my awareness of energy efficiency.	3.48	42	0.109
The training workshop increased my awareness of ways to improve the energy efficiency of my school.	3.55	42	0.114
The training workshop increased my knowledge of possible no-cost behavioral/operations changes that could be implemented at my school.	3.66	42	0.084
The training workshop increased my knowledge of ways to use energy education to enhance the student learning experience.	3.38	42	0.118
The information in the resource material positively affected my attitude toward energy efficiency.	3.36	39	0.113
As a result of participating in the Program and based on the information learned, I am now more aware of energy efficiency and ways to save energy at my school.	3.40	42	0.137
As a result of participating in the Program and based on the information learned, I am now more knowledgeable of energy efficiency and ways to save energy at my school.	3.33	42	0.139
As a result of participating in the Program and based on the information learned, I believe that my students are more aware of energy efficiency and ways to save energy at school, home, and in the community.	3.21	42	0.147
As a result of participating in the Program and based on the information learned, I believe that my students are more knowledgeable of energy efficiency and ways to save energy at school, home, and in the community.	3.19	42	0.141
As a result of participating in the Program and based on the information learned, I now have a more positive attitude about energy efficiency.	3.40	42	0.113
As a result of participating in the Program and based on the information learned, I believe that my students now have a more positive attitude about energy efficiency.	3.26	42	0.137

Teachers were also asked to report whether their students made behavioral changes with regard to saving energy at their school as a result of participating in the Program. Exhibit 4.18 presents these results. The greater majority, 83.8% report that students did make behavioral changes.

Exhibit 4.18.
Teacher Reports of Student Behavioral Changes

Students Made Behavioral Changes	Frequency	Percent
NO	6	16.2
YES	31	83.8
Total	37	100
Refused	5	

Exhibit 4.19 summarizes the results of custodians' responses to a series of questions regarding the impact of the information received while participating in the GSGC Program. Again, the results seem to provide evidence in support of the program implementation and theory models. Specifically, custodians report that participating in the Program impacted them and that their attitudes, awareness, and knowledge of energy efficiency and ways to save energy at their school were also positively impacted.

Exhibit 4.19
Custodians' Reported Informational Impacts

Question	Mean	N	Std. Error of the Mean
The training workshop increased my awareness of energy efficiency.	3.00	9	0.289
The training workshop increased my awareness of ways to improve the energy efficiency of my school.	3.11	9	0.351
The training workshop increased my knowledge of possible no-cost behavioral/operations changes that could be implemented at my school.	3.22	9	0.324
As a result of participating in the Program and based on the information learned, I am now more aware of energy efficiency and ways to save energy at my school.	3.38	8	0.375
As a result of participating in the Program and based on the information learned, I am now more knowledgeable of energy efficiency and ways to save energy at my school.	3.38	8	0.375
As a result of participating in the Program and based on the information learned, I now have a more positive attitude about energy efficiency.	3.33	9	0.373

4.2.2 No Cost Behavioral and Operations Changes

The evaluation team was not able to obtain a list of recommendations for no-cost behavioral and operations changes made to schools in order to inquire specifically which of these recommendations

were implemented. Instead, we provided a list of relevant behavioral and operations changes that may have been or were similar to those recommended and asked teachers and custodians which they implemented. Note that the scope of the evaluation did not allow us to investigate more *rigorously* which changes were solely a result of participating in the Program nor the extent to which participating in the Program caused teachers and custodians to do more of certain actions they might have already been doing. Rather, the results presented in Exhibit 4.20 and Exhibit 4.21 merely show the percentage of all teachers and custodians, respectively, who, based on self-reports, claimed to have implemented or plan to implement the specific behavioral change as a result of participating in the GSGC and based on information learned. Exhibit 4.20 also shows the percent indicating that they had already taken these actions even prior to participating in the Program or they do not plan to implement these actions.

The majority of teachers report that participating in the Program caused them to make behavioral and operations changes at the school. While there are some teachers who indicated that they have not and do not plan to implement some of these behavioral changes, the overwhelming majority indicates that they have implemented these changes or plan to do so soon. In terms of encouraging students to engage in energy conservation behaviors and fellow teachers and school staff to follow school's energy action plan, more than 90 percent of all teachers indicate that they have done this with the remaining 10 percent indicating that they already did this prior to participating in the GSGC Program.

Exhibit 4.20
Teachers' Reported Behavioral and Operations Changes

As a result of participating in the Green Schools Program and based on information learned, I…	Yes	No, But Plan To In The Next 12 Months	No and *Do Not* Plan To In The Next 12 Months	I Did So Even Before The Green Schools Program	Don't Know	N
…turned off computers that are not required to be on 24 hours a day.	61.0%	7.3%	2.4%	29.3%		41
…made sure that lights in classrooms are turned off when not in use.	65.9%	7.3%	2.4%	23.8%		41
…reported any equipment that is not working properly.	66.7%	7.7%	2.6%	23.1%	(2)	39
…checked printers and copiers to be sure they are off before leaving the building.	60.0%	12.5%	10.0%	17.5%		40
…made sure personal lights and heaters that are brought into the classroom are turned off before leaving the school each day.	70.3%	2.7%	5.4%	21.6%	(1)	37
…reported any time clocks that are not operating properly.	50.0%	21.4%	7.1%	21.4%	(8)	28
…made sure that windows are closed when heating or cooling equipment is operating.	64.9%	2.7%	5.4%	27.0%		37
…encouraged students to engage in energy conservation behavior.	87.8%	4.9%		7.3%		41
…encouraged teachers and administrators to follow my school's energy action plan.	86.5%	5.4%		8.1%		

Note that, while for certain activities, *some* custodians report already having been taking the indicated actions, the Program seems to have provided the greater majority of custodians with new information regarding viable no-cost recommendations for saving energy that they ultimately implemented.

Exhibit 4.21
Custodians' Reported Behavioral and Operations Changes

As a result of participating in the Green Schools Program and based on information learned, I…	Yes	No, But Plan To In The Next 12 Months	No and *Do Not* Plan To In The Next 12 Months	I Did So Even Before The Green Schools Program	Don't Know	N
…made sure that outside lights are turned off when not in use and that timers and daylight sensors are working properly.	66.7%			33.3%		9
…made sure that lights in closets and storage areas are turned off when not in use.	77.8%			22.2%		9
…made sure that lights in mechanical areas are turned off when not in use.	77.8%	11.1%		11.1%		9
…checked classroom lights and turned them off when not needed.	66.7%	11.1%		22.2%		9
…checked for obstructions in front of ventilation units.	55.6%	11.1%		33.3%		9
…reported any equipment that is not working properly.	55.6%			44.4%		9
…reported leaking faucets and other water-related items.	55.6%			44.4%		9
…checked thermostat settings, if appropriate.	62.5%			37.5%		8
…checked modular/re-locatable/temporary classroom units to be sure that lights are turned off.	42.9%	14.3%		42.9%		7
…reported any time clocks that are not operating properly.	75.0%			25.0%		8
…made sure that windows are closed and secured when heating or cooling equipment is operating.	62.5%			37.5%		8
…encouraged students to engage in energy conservation behavior.	42.9%	14.3%		42.9%		7
…encouraged teachers and administrators to follow my school's energy action plan.	62.5%	12.5%		25.0%		8

4.3 Recommendations

Based on the findings of the Team, the following recommendations are made by area assessed.

4.3.1 Program Process and Implementation

While the process review revealed no significant issues, and the Program appears to have achieved its primary goals and objectives, the evaluation team believes that the following specific recommendations will improve overall program processes and performance:

1. Investigate the communications process between the LPS and the ASE in order to assess whether there are in fact existing bottlenecks and whether improvements could be implemented to better support the staff in terms of preparing them to implement the GSGC Program.
2. Investigate further the process for carrying out community-based activities through the SAC in order to determine whether there are specific process improvements that could be implemented to make this process more satisfying for teachers.
3. Similarly, investigate the process for developing the school action plans and for working with school teams to implement the plans in order to determine whether there are process improvements that could be implemented that would make this process more satisfying for custodians.

The evaluation looked at the process used by the GSGC Program to calculate energy savings to determine if the savings coming out of that process were realistic. Based on this analysis, the evaluation team believes that there are difficulties within the process such that any estimated energy impacts should be provided only with a highly visible caveat indicating that, while the savings were created using a calibrated computer simulation, actual savings may be absent, less, or more than stated. The EZ Sim model, as it is used within this Program, should not be the basis for any monetary exchanges unless the Program puts more resources to the creation and maintenance of the models. If the Program chooses to maintain this component as a core part of the program, the evaluation team makes the following recommendations:

1. A qualified technical analyst or engineer should perform onsite audits to obtain the data for the EZ Sim computer model. The analyst should perform a thorough audit of the building and operating characteristics to allow for updating parameters in the model.
2. The program should set up a process in which the utility bills at the school site are more readily available to the technical analyst each month.
3. After the model has been tuned and data is input for an estimate of energy savings, the modeler should know the specific dates that the behavioral changes were occurring and what those changes may be so that there is knowledge of when there may be savings and provide a judicious eye to the magnitude of energy use in those periods.
4. The $/kWh used should be based on the per-kWh rate paid by the school. The monthly $/kWh value should be used rather than a weighted average to calculate estimated monetary savings each month.

5. The ASE should devote more resources to this Program element to be able to provide the most accurate information given that the results are used to market the Program and to encourage districts to return savings dollars to schools that earn them.
6. Alternatively, in the absence of being able to devote more resources to improve the rigor of this Program component, the evaluation team recommends that the ASE investigate a feasible method to track the Program recommended no-cost behavioral and operations changes and those changes actually implemented by participants and, ultimately, tie these changes to readily justifiable savings estimates. The intent would be to create a more straightforward approach to providing savings information to districts and schools and basis for making the transfer of dollar savings to schools.

4.3.2 Impact Assessment Recommendations

The Program appears to have affected their customers. The impacts found lead to the following recommendations:

1. The ASE should investigate more closely the extent of the outreach effort in terms of the number students reached and the extent to which the energy education materials are used in the classroom in order to better document the reach of the Program.
2. STEM pre- and post-test results should be tracked and maintained for each student in order to document the impact of the program in terms of changes in knowledge and awareness of EE as a result of participating in the Program.
3. Create a tracking system that maintains specific information on the recommendations made to each school, the basis upon which these recommendations are made, and the numbers of recommendations implemented by each school in order to be able to better document the full impacts of the Program.

APPENDIX A BIBLIOGRAPHY

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APPENDIX B SURVEY INSTRUMENTS

There were three surveys developed for this evaluation. The Uses and Sources chart for all three instruments is provided first. After this are the instruments. In order they are:

1. Teacher Mail Survey
2. Custodian Mail Survey
3. Local Program Staff Survey

There also was an in-depth interview guide for the ASE Program Liaison. That instrument is last in this appendix.

GSGC Program Evaluation: Sources and Uses Chart

Evaluation Question	Implementation Theory Link	Program Theory Link	Program Database	Teacher Surveys	In-Depth Interviews	STEM Student Pre-Tests and Post-Tests
How many schools were recruited?	9		X			
Were the HTR goals attained?	9		X			
How many administrators, staff, and teachers participated?	9		X			
How many school audits were completed?	44		X			
How many action plans were developed and implemented?	19, 27, 29		X		X	
How many no-cost behavioral and operational changes were implemented?	29, 33		X		X	
How many SAC community outreach activities were completed?	23		X			
Does the program provide accurate savings information	37		X		X	
Did districts, administrators, teachers, staff find the program to be beneficial?		1, 2, 3		X	X	
To what degree is energy education taught in the classroom?	15	5		X		
To what degree were teachers' and students' awareness affected and behaviors changed?		6, 7		X		X

TEACHER SURVEY

In compliance with CPUC requirements, the Alliance to Save Energy (ASE) is evaluating the Green Schools Program, educational and energy resources, and professional development training you received by participating in the Program and seeks feedback on ways to improve this Program. We request your assistance with the following quick survey and note that the answers you provide will be kept strictly confidential and will not be directly attributable to you. Thank you very much for your cooperation!

The following is a series of statements about the effectiveness of the professional development workshop you participated in for the Green Schools Program. Please mark the appropriate box to indicate whether you disagree strongly, disagree somewhat, agree somewhat, or agree strongly with each statement. If you did not participate in a training workshop, please mark the appropriate space below.

The training workshop …	**Disagree** Strongly	**Disagree Somewhat**	**Agree Somewhat**	**Agree Strongly**
1A. ...increased my awareness of energy efficiency.				
1B. ...increased my awareness of ways to improve the energy efficiency of my school.				
1C. …increased my knowledge of possible no-cost behavioral/operations changes that could be implemented at my school.				
1D. …increased my knowledge of ways to use energy education to enhance the student learning experience.				
I did not participate in a training workshop. _____				

The following is a series of statements regarding the various ASE Green Schools Program resources provided by EEPIC (George Barganier) or SEI (Mildred Dandridge). Please mark the appropriate box to indicate whether you disagree strongly, disagree somewhat, agree somewhat, or agree strongly with each statement. If you did not receive any resource materials please mark the appropriate space below. For the questions that follow, please indicate your answer as appropriate in the spaces provided.

	Disagree Strongly	**Disagree Somewhat**	**Agree Somewhat**	**Agree Strongly**
A. The information in the resource material was presented in an engaging format.				
B. The information in the resource material was easy to understand.				
C. The information in the resource material was credible.				
D. The information in the resource material was useful for incorporating energy education in the classroom.				
E. Sufficient information was provided in the resource materials to help me develop classroom activities/school-based projects that focused on energy.				
F. I shared the resource materials with other teachers who were NOT participating in the Program.				

G. The information in the resource material positively affected my attitude toward energy efficiency.				
I did not receive any resource materials. _____				

H. **For each school term listed below, please indicate the number of classes in which you used <u>any</u> of the ASE Green Schools Program resource materials (even if only one class per term):**

Fall '02 _____ Spring '03 _____ Fall '03 _____ Spring '04 _____

I. Please indicate the approximate number of students (on average), who are enrolled in each of these classes.

_____ (Number)

J. Please indicate the approximate percentage of instructional hours within a given class (on average) that involved using <u>any</u> of the ASE Green Schools Program resources. _____ %

K. Please indicate the approximate number of colleagues/other teachers with whom you shared <u>any</u> of the ASE Green Schools Program resource materials, if applicable. ____ (Number)

The following is a series of statements regarding participating in the ASE Green Schools Program. Please mark the appropriate box to indicate whether you disagree strongly, disagree somewhat, agree somewhat, or agree strongly with each statement. For the question that follows, please indicate 'yes' or 'no' as appropriate in the space provided.

I agreed to participate in the Program because…	**Disagree Strongly**	**Disagree Somewhat**	**Agree Somewhat**	**Agree Strongly**
A. … I believed the Program would save energy for my school.				
B. … I believed the Program would enhance the student learning experience.				
As a result of participating in the Program and based on the information learned…				
C. …I am now more aware of energy efficiency and ways to save energy at my school.				
D. …I am now more knowledgeable about energy efficiency and ways to save energy at my school.				
E. …I believe that my students are more aware of energy efficiency and ways to save energy at school, home, and in the community.				
F. …I believe that my students are more knowledgeable of energy efficiency and ways to save energy at school, home, and in the community.				
G. …I now have a more positive attitude about energy efficiency.				
H. …I believe that my students now have a more positive attitude about energy efficiency.				

I. As a result of participating in the Program and based on the information learned, my students made behavioral changes with regard to saving energy at our school. YES _____ NO _____

The following is a list of key Green Schools Program elements. Please mark the appropriate box to indicate whether you are very dissatisfied, somewhat dissatisfied, somewhat satisfied, or very satisfied with each Program element, or N/A (not applicable).

	Very Dissatisfied	**Somewhat Dissatisfied**	**Somewhat Satisfied**	**Very Satisfied**	**N/A**
A. The process for developing an energy action plan for my school/district.					
B. The process for working on school teams to implement the energy action plan.					
C. The process for working with either EEPIC or SEI Staff to implement the Program.					
D. The quantity of ASE Green Schools Program resource materials provided to me by either EEPIC or SEI for incorporating energy education in the classroom.					
E. The quality of the Green Schools Program resource materials provided to me by either EEPIC or SEI for incorporating energy education in the classroom.					
F. The process for implementing community-based projects through the Student Advisory Council.					
G. The overall experience of participating in the Green Schools Program.					

The following is a list of possible no-cost behavioral or operations changes that may have been implemented at your school. Please mark the appropriate box that best describes your actions with respect to each possible option…

As a result of participating in the Green Schools Program and based on information learned, I…	**Yes**	**No, But Plan To In The Next 12 Months**	**No and *Do Not* Plan To In The Next 12 Months**	**I Did So Even Before The Green Schools Program**	**Don't Know**
…turned off computers that are not required to be on 24 hours a day.					
…made sure that lights in classrooms are turned off when not in use.					
…reported any equipment that is not working properly.					
…checked printers and copiers to be sure they are off before leaving the building.					
…made sure personal lights and heaters that are brought into the classroom are turned off before leaving the school each day.					
…reported any time clocks that are not operating properly.					
…made sure that windows are closed when heating or					

cooling equipment is operating.					
…encouraged students to engage in energy conservation behavior.					
…encouraged teachers and administrators to follow my school's energy action plan.					

In the space provided below, please provide any additional comments you may have regarding the Program. In particular we are interested in feedback you can provide relating to:

Other ways you have saved energy at your school.

Comments on the ASE Green Schools Program materials you received.

General comments or suggestions for the Program.

CUSTODIAN SURVEY

In compliance with CPUC requirements, the Alliance to Save Energy (ASE) is evaluating the Green Schools Program, energy resources, and professional development training you received by participating in the Program and seeks feedback on ways to improve this Program. We request your assistance with the following quick survey and note that the answers you provide will be kept strictly confidential and will not be directly attributable to you. Thank you very much for your cooperation!

The following is a series of statements about the effectiveness of the professional development workshop you participated in for the Green Schools Program. Please mark the appropriate box to indicate whether you disagree strongly, disagree somewhat, agree somewhat, or agree strongly with each statement. If you did not participate in a training workshop, please mark the appropriate space below.

The training workshop…	Disagree Strongly	**Disagree Somewhat**	**Agree Somewhat**	**Agree Strongly**
1A. ...increased my awareness of energy efficiency.				
1B. ...increased my awareness of ways to improve the energy efficiency of my school.				
1C. …increased my knowledge of possible no-cost behavioral/operations changes that could be implemented at my school.				
I did not participate in a training workshop. _____				

The following is a series of statements regarding participating in the Green Schools Program. Please mark the appropriate box to indicate whether you disagree strongly, disagree somewhat, agree somewhat, or agree strongly with each statement.

Based on the information I received when I first learned about my school's participation in the Green Schools program, I thought it was a good idea because…	Disagree Strongly	**Disagree Somewhat**	**Agree Somewhat**	**Agree Strongly**
A. … I believed the Program would save energy for our school.				
As a result of participating in the Program and based on the information learned…				
B. …I am now more aware of energy efficiency and ways to save energy at my school.				
C. …I am now more knowledgeable about energy efficiency and ways to save energy at my school.				
D. … I now have a more positive attitude about energy efficiency.				

The following is a list of key Green Schools Program elements. Please mark the appropriate box to indicate whether you are very dissatisfied, somewhat dissatisfied, somewhat satisfied, or very satisfied with each Program element, or N/A (not applicable).

	Very Dissatisfied	**Somewhat Dissatisfied**	**Somewhat Satisfied**	**Very Satisfied**	**N/A**
A. The process for developing an energy action plan for my school/district.					
B. The process for working on school teams to implement the energy action plan.					
C. The process for working with either EEPIC or SEI Staff to implement the Program.					
D. The quantity of ASE Green Schools Program resource materials provided to me by either the EEPIC or SEI relating to saving energy at school.					
E. The quality of the ASE Green Schools Program resource materials provided to me by either EEPIC or SEI relating to saving energy at school.					
F. The overall experience of participating in the Green Schools Program.					

The following is a list of possible no-cost behavioral or operations changes that may have been implemented at your school. Please mark the appropriate box that best describes your actions with respect to each possible option.

As a result of participating in the Green Schools Program and based on information learned, I…	**Yes**	**No, But Plan To In The Next 12 Months**	**No and *Do Not* Plan To In The Next 12 Months**	**I Did So Even Before The Green Schools Program**	**Don't Know**
…made sure that outside lights are turned off when not in use and that timers and daylight sensors are working properly.					
…made sure that lights in closets and storage areas are turned off when not in use.					
…made sure that lights in mechanical areas are turned off when not in use.					
…checked classroom lights and turned them off when not needed.					
…checked for obstructions in front of ventilation units.					
…reported any equipment that is not working properly.					
…reported leaking faucets and other water-related items.					
…checked thermostat settings, if appropriate.					
…checked modular/re-locatable/temporary classroom units to be sure that lights are turned off.					

…reported any time clocks that are not operating properly.					
…made sure that windows are closed and secured when heating or cooling equipment is operating.					
…encouraged students to engage in energy conservation behavior.					
…encouraged teachers and administrators to follow my school's energy action plan.					

In the space provided below, please provide any additional comments you may have regarding the Program. In particular we are interested in feedback you can provide relating to:

Other ways you have saved energy at your school.

Comments on the Program materials you received.

General comments or suggestions for the Program.

LOCAL PROGRAM STAFF SURVEY

In compliance with California Public Utilities Commission (CPUC) requirements, the Alliance to Save Energy (ASE) is evaluating the Program Year 2002-2003 Green Schools (GS) Program, and seeks feedback on ways to improve this Program. We request your assistance with the following quick survey and note that the answers you provide will be kept strictly confidential. Thank you very much for your cooperation!

The following is a series of statements about the effectiveness of the orientation/training you received for the GS Program. Please type an 'X' in the appropriate box to indicate whether you disagree strongly, disagree somewhat, agree somewhat, or agree strongly with each statement. If you did not participate in an orientation workshop, please type a 'X' in the appropriate space below.

At the annual orientation workshop…	**Disagree** Strongly	**Disagree Somewhat**	**Agree Somewhat**	**Agree Strongly**
A. ...we were sufficiently informed about the goals for the GS program.				
B. ...we adequately reviewed the GS resources and materials that were to be provided to participants in the program period.				
C. …we had adequate time to plan activities relating to carrying out deliverables to ASE as indicated in our scope of work for the program year.				
D. …we were given sufficient orientation/training, ideas, and information to recruit schools for the GS program.				
E. …we were given sufficient orientation/training, ideas, and information to conduct the professional development workshops for the GS program.				
F. …we gained sufficient knowledge to effectively carry out our overall scope of work for the GS program.				
I did not participate in an orientation workshop for the ASE GS Program staff. _____				

The following is a series of statements about the effectiveness of general communication with the ASE staff throughout the year (communication that occurred outside the orientation workshop). Please type an 'X' in the appropriate box to indicate whether you disagree strongly, disagree somewhat, agree somewhat, or agree strongly with each statement.

Communication with ASE…	**Disagree** Strongly	**Disagree Somewhat**	**Agree Somewhat**	**Agree Strongly**
A. …regarding meeting deliverables to the ASE worked well.				
B. …regarding the day-to-day operations of the Program worked well.				
C. …about GS meetings and workshops worked well.				

D. …provided me with current information about the GS Program.				
E. …required about the right amount of my time.				
F. …did not have any significant bottlenecks.				
G. …overall, provided sufficient preparation to implement the GS Program.				
Please indicate the percentage of your total work time that is dedicated to communicating about the GS Program. _____%				

The following is a series of statements regarding the ASE Green Schools Program. Please type an 'X' in the appropriate box to indicate whether you disagree strongly, disagree somewhat, agree somewhat, or agree strongly with each statement.

	4.4 Disagree Strongly	**Disagree Somewhat**	**Agree Somewhat**	**Agree Strongly**
A. The energy action plan developed with school teams provided concrete steps for schools to reduce energy.				
B. The amount and quality of information and resources provided to teachers was adequate for them to effectively educate students about energy.				
C. The amount of information provided to custodians was adequate for them to effectively participate in the program.				
D. The strategy for implementing community-based projects through the Student Advisory Council worked well.				
E. The logistics of providing training for teachers and custodians worked well.				
F. Recommendations of no-cost behavioral and operations changes were effectively identified.				
G. We were able to accomplish all of the anticipated program outcomes as listed in our scope of work.				
H. The marketing and recruitment efforts that were conducted were successful.				
I. Recruiting Hard-to-Reach schools did not pose any significant obstacles.				
J. Working with Hard-to-Reach schools, once recruited, did not pose any significant difficulties or barriers.				

K. The amount of collaboration we were contracted to do with the utilities and other organizations was about right.				
L. This collaboration led to the sharing of information, contacts, and/or resources.				
M. The overall process of working to implement the GS Program worked well.				

In the space provided below, please provide a list of the types of no-cost behavioral and operational changes that were recommended to schools in your area and indicate for the different schools how these recommendations were determined. (Please augment the list as necessary in order to provide this information for each school you dealt with.)

School 1:

School 2:

School 3:

School 4:

Etc.

4a. On average, what percent of these recommendations were implemented? _____%

In the space provided below, please provide any additional comments you may have regarding any of the questions above or about the GS Program in general. In particular we are interested in feedback you can provide relating to:

- ways to improve the teacher/staff training, program resources, or the process for participating in the program.
- ways to improve marketing and recruitment.
- general comments or suggestions for the Program.

INTERVIEW GUIDE: PROCESS INTERVIEW WITH ASE PROGRAM LIAISON

Program Structure and Performance

1. Looking at the logic model (implementation model) please verify that the core of the program is still as indicated in the model.
    - Did all of the schools/districts participate in each of the core components?
    - If not, what are some of the reasons why the core components varied by school/district?
2. What parts of the program changed over the year from what was planned?
    - If there were changes, what are the reasons for these changes?
3. How did you define the HTR populations in each utility service area?
    - How was working with the HTR schools different from the other schools?
    - Per the program data you provided to us, you exceeded your HTR targets for each area (PG&E: Target=7; Achieved=10* [4 qualified; 6 asserted]; SCE: Target=15; Achieved=19). To what do you attribute these successes?
4. Are there any anticipated program outcomes that were not achieved thus far?
    - If yes, what are the reasons for this?

Information Flow and Quality Control

5. How does information flow from the ASE program staff to the regional program staff and ultimately to the participants in the program?
    - Where did you see bottlenecks in this flow, if any?
    - How do you think this communication could be improved?
6. What type of training is provided to the regional program staff?
7. Is there an established process for monitoring the work of the regional program staff?
    - If yes, who performs this function?
8. The Program provides many resources to participants. Which ones do you find are used the most?
    - Why are certain types of information or resources little used?
9. In what ways and to what extent is program information shared with non-participants?
    - How do you know this?

Organizational Collaboration

10. Are there any (outside) organizations that have been involved in some way in the implementation of your program?

- If so, please list the names of all of the organizations.
- What was the nature of the (different) collaboration(s)?
- Was there any inter-organizational exchange and/or sharing of resources (including information, organizational contacts, networking, etc.)?

Marketing and Recruitment Efforts

11. What are the types of marketing/recruitment efforts that were conducted?
    - Do you feel that these efforts were successful? Why or why not?
    - Do you have any ideas/plans for improvement?
12. Are there other ways that schools/districts learn about and/or make contact with the GSGC?

Program Implementation

13. Why do you think schoolteachers, facility managers, or custodians volunteer to participate in the program?
    - What has been your experience in terms of differences across schools among this group (teachers, facility managers, custodians); i.e., has this group influenced the program differently from school to school? If so, how?
    - Do you think the program can influence the rate of volunteerism in any way?
14. What types of teacher/staff workshops are conducted?
    - How do you determine the success of these workshops?
    - Are there plans for changing these workshops?
15. Some participants received training from the regional staff instead of participating in the professional workshops. What did this training entail?
    - How do you assess the success of this training?
16. Describe the process for participating in the STEM program.
    - Who is responsible for implementing this aspect of the program?
    - How are teachers and students selected to participate in the STEM program?
17. What is the role of the California GSGC Advisory Council?
18. What types of community outreach activities were conducted (by the ASE)?
    - Were these efforts successful? Why do you say this?
    - How is the marketing/recruitment effort different from the community outreach effort?
19. In your experience, what was the typical process for developing and implementing the school and/or district-wide action plans?

- Who was responsible for ensuring that the plans were implemented at the school? In the district?

20. What types of no-cost behavioral and operations changes were recommended to school/ district participants?
    - How were these recommendations derived for each school/district?
    - To what extent were these recommendations implemented?
    - How are these tracked?
21. To your knowledge, have any of the schools received money back from the district due to savings?
22. What parts of the program do you think need improvement?
    - What would you suggest is needed to help make those changes?

APPENDIX C SURVEY FREQUENCIES

There are two sets of frequencies that go with two of the three surveys, including: 1) the teacher mail survey, and 2) the custodian mail survey. There were only two local program staff surveys returned and the responses were generally reviewed to inform the results; no frequencies were computed for this survey.

Frequencies: Teacher Surveys

<part> Did you participate in a training workshop?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	2.4	2.4	2.4
	Yes	41	97.6	97.6	100.0
	Total	42	100.0	100.0	

<materials> Did you receive resource materials?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	4.8	4.8	4.8
	Yes	40	95.2	95.2	100.0
	Total	42	100.0	100.0	

<q1a> The training workshop increased my awareness of energy efficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	2.4	2.4	2.4
	Disagree Somewhat	2	4.8	4.8	7.1
	Agree Somewhat	15	35.7	35.7	42.9
	Agree Strongly	24	57.1	57.1	100.0
	Total	42	100.0	100.0	

<q1b> The training workshop increased my awareness of ways to improve the energy efficiency of my school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	2.4	2.4	2.4
	Disagree Somewhat	3	7.1	7.1	9.5
	Agree Somewhat	10	23.8	23.8	33.3
	Agree Strongly	28	66.7	66.7	100.0
	Total	42	100.0	100.0	

<q1c> The training workshop increased my knowledge of possible no-cost behavioral/operations changes that could be implemented at my school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Somewhat	1	2.4	2.4	2.4
	Agree Somewhat	15	35.7	35.7	38.1
	Agree Strongly	26	61.9	61.9	100.0
	Total	42	100.0	100.0	

<q1d> The training workshop increased my knowledge of ways to use energy education to enhance the student learning experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Somewhat	7	16.7	16.7	16.7
	Agree Somewhat	12	28.6	28.6	45.2
	Agree Strongly	23	54.8	54.8	100.0
	Total	42	100.0	100.0	

<q2a> The information in the resource material was presented in an engaging format.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Somewhat	6	14.3	15.0	15.0
	Agree Somewhat	18	42.9	45.0	60.0
	Agree Strongly	16	38.1	40.0	100.0
	Total	40	95.2	100.0	
Missing	-99	2	4.8		
Total		42	100.0		

<q2b> The information in the resource material was easy to understand.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	2.4	2.5	2.5
	Disagree Somewhat	3	7.1	7.5	10.0
	Agree Somewhat	18	42.9	45.0	55.0
	Agree Strongly	18	42.9	45.0	100.0
	Total	40	95.2	100.0	
Missing	-99	2	4.8		
Total		42	100.0		

<q2c> The information in the resource material was credible.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	2.4	2.6	2.6
	Disagree Somewhat	2	4.8	5.3	7.9
	Agree Somewhat	10	23.8	26.3	34.2
	Agree Strongly	25	59.5	65.8	100.0
	Total	38	90.5	100.0	
Missing	-99	2	4.8		
	Refused	2	4.8		
	Total	4	9.5		
Total		42	100.0		

<q2d> The information in the resource material was useful for incorporating energy education in the classroom.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	2.4	2.5	2.5
	Disagree Somewhat	5	11.9	12.5	15.0
	Agree Somewhat	18	42.9	45.0	60.0
	Agree Strongly	16	38.1	40.0	100.0
	Total	40	95.2	100.0	
Missing	-99	2	4.8		
Total		42	100.0		

<q2e> Sufficient information was provided in the resource materials to help me devote classroom activities/school-based projects that focused on energy.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	2	4.8	5.0	5.0
	Disagree Somewhat	2	4.8	5.0	10.0
	Agree Somewhat	20	47.6	50.0	60.0
	Agree Strongly	16	38.1	40.0	100.0
	Total	40	95.2	100.0	
Missing	-99	2	4.8		
Total		42	100.0		

<q2f> I shared the resource materials with other teachers who were NOT participating in the Program.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	8	19.0	20.5	20.5
	Disagree Somewhat	7	16.7	17.9	38.5
	Agree Somewhat	13	31.0	33.3	71.8
	Agree Strongly	11	26.2	28.2	100.0
	Total	39	92.9	100.0	
Missing	-99	2	4.8		
	Refused	1	2.4		
	Total	3	7.1		
Total		42	100.0		

<q2g> The information in the resource materias positively affected my attitude toward energy efficiency.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	2.4	2.6	2.6
	Disagree Somewhat	2	4.8	5.1	7.7
	Agree Somewhat	18	42.9	46.2	53.8
	Agree Strongly	18	42.9	46.2	100.0
	Total	39	92.9	100.0	
Missing	-99	2	4.8		
	Refused	1	2.4		
	Total	3	7.1		
Total		42	100.0		

	<q2hfall02> The number of classes in Fall 02 that you used ANY of the GS resource materials				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	9.5	23.5	23.5
	1	4	9.5	23.5	47.1
	2	1	2.4	5.9	52.9
	3	1	2.4	5.9	58.8
	6	1	2.4	5.9	64.7
	X (one)	6	14.3	35.3	100
	Total	17	40.5	100	
Missing	88	25	59.5		
	Total	42	100		

*"X (one)" indicates those respondents who inserted a check mark in the space provided. These cases are counted as one class per mark.

	<q2hspring03> The number of classes in Spring 03that you used ANY of the GS resource materials				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	9.5	23.5	23.5
	1	2	4.8	11.8	35.3
	2	1	2.4	5.9	41.2
	3	1	2.4	5.9	47.1
	4	1	2.4	5.9	52.9
	X (one)	8	19.0	47.1	100
	Total	17	40.5	100	
Missing	88	25	59.5		
	Total	42	100		

*"X (one)" indicates those respondents who inserted a check mark in the space provided. These cases are counted as one class per mark.

	<q2hfall03> The number of classes in Fall 03 that you used ANY of the GS resource materials				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	9.5	12.1	12.1
	1	9	21.4	27.3	39.4
	12	1	2.4	3.0	42.4
	14	1	2.4	3.0	45.5
	2	5	11.9	15.2	60.6
	22	1	2.4	3.0	63.6
	3	1	2.4	3.0	66.7
	X (one)	11	26.2	33.3	100
	Total	33	78.6	100	
Missing	88	9	21.4		
	Total	42	100		

*"X (one)" indicates those respondents who inserted a check mark in the space provided. These cases are counted as one class per mark.

	<q2hspring04> The number of classes in Spring 04 that you used ANY of the GS resource materials				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	12	28.6	36.4	36.4
	12	1	2.4	3.0	39.4
	14	1	2.4	3.0	42.4
	2	4	9.5	12.1	54.5
	22	1	2.4	3.0	57.6
	3	1	2.4	3.0	60.6
	5	1	2.4	3.0	63.6
	X (one)	12	28.6	36.4	100
	Total	33	78.6	100	
Missing	88	9	21.4		
	Total	42	100		

*"X (one)" indicates those respondents who inserted a check mark in the space provided. These cases are counted as one class per mark.

<#students> The approximate number of students (on average), who are enrolled in each of these classes.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20	16	38.1	40.0	40.0
	21	2	4.8	5.0	45.0
	25	5	11.9	12.5	57.5
	26	1	2.4	2.5	60.0
	30	4	9.5	10.0	70.0
	32	2	4.8	5.0	75.0
	34	7	16.7	17.5	92.5
	35	1	2.4	2.5	95.0
	38	1	2.4	2.5	97.5
	120	1	2.4	2.5	100.0
	Total	40	95.2	100.0	
Missing	88	2	4.8		
Total		42	100.0		

<Instrhrs> The approximate percentage of instructional hours within a given class (on average) that involved using ANY of the GS resource materials.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	9.5	10.8	10.8
	2	6	14.3	16.2	27.0
	3	2	4.8	5.4	32.4
	5	11	26.2	29.7	62.2
	10	6	14.3	16.2	78.4
	15	4	9.5	10.8	89.2
	20	2	4.8	5.4	94.6
	25	1	2.4	2.7	97.3
	30	1	2.4	2.7	100.0
	Total	37	88.1	100.0	
Missing	88	5	11.9		
Total		42	100.0		

<sharedres> The approximate number of colleagues/other teachers with whom you shared ANY of the GS resource materials, if applicable.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	4.8	10.5	10.5
	1	5	11.9	26.3	36.8
	3	5	11.9	26.3	63.2
	5	1	2.4	5.3	68.4
	6	2	4.8	10.5	78.9
	10	1	2.4	5.3	84.2
	15	1	2.4	5.3	89.5
	20	1	2.4	5.3	94.7
	60	1	2.4	5.3	100.0
	Total	19	45.2	100.0	
Missing	88	23	54.8		
Total		42	100.0		

<q3a> I agreed to participate in the Program because I believed the Program would save energy for our school.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	2	4.8	4.8	4.8
	Disagree Somewhat	1	2.4	2.4	7.1
	Agree Somewhat	7	16.7	16.7	23.8
	Agree Strongly	32	76.2	76.2	100.0
	Total	42	100.0	100.0	

<q3b> I agreed to participate in the Program because I believed the Program would enhance the student learning experience.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	2.4	2.4	2.4
	Disagree Somewhat	2	4.8	4.8	7.1
	Agree Somewhat	11	26.2	26.2	33.3
	Agree Strongly	28	66.7	66.7	100.0
	Total	42	100.0	100.0	

<q3c> As a result of participating in the Program...I am now more aware of energy efficiency and ways to save energy at my school.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	3	7.1	7.1	7.1
	Disagree Somewhat	2	4.8	4.8	11.9
	Agree Somewhat	12	28.6	28.6	40.5
	Agree Strongly	25	59.5	59.5	100.0
	Total	42	100.0	100.0	

<q3d> As a result of participating in the Program...I am now more knowledgeable about EE and ways to save energy at my school.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	3	7.1	7.1	7.1
	Disagree Somewhat	3	7.1	7.1	14.3
	Agree Somewhat	13	31.0	31.0	45.2
	Agree Strongly	23	54.8	54.8	100.0
	Total	42	100.0	100.0	

<q3e> As a result of participating in the Program...I believe that my students are more aware of EE and ways to save energy at school, home, and in the community.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	3	7.1	7.1	7.1
	Disagree Somewhat	6	14.3	14.3	21.4
	Agree Somewhat	12	28.6	28.6	50.0
	Agree Strongly	21	50.0	50.0	100.0
	Total	42	100.0	100.0	

<q3f> As a result of participating in the Program...I believe that my students are more knowledgeable of EE and ways to save energy at school, home, and in the community.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	3	7.1	7.1	7.1
	Disagree Somewhat	5	11.9	11.9	19.0
	Agree Somewhat	15	35.7	35.7	54.8
	Agree Strongly	19	45.2	45.2	100.0
	Total	42	100.0	100.0	

<q3g> As a result of participating in the Program...I now have a more positive attitude about energy efficiency.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	2.4	2.4	2.4
	Disagree Somewhat	3	7.1	7.1	9.5
	Agree Somewhat	16	38.1	38.1	47.6
	Agree Strongly	22	52.4	52.4	100.0
	Total	42	100.0	100.0	

<q3h> As a result of participating in the Program...I believe that my students now have a more positive attitude about energy efficiency.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	3	7.1	7.1	7.1
	Disagree Somewhat	3	7.1	7.1	14.3
	Agree Somewhat	16	38.1	38.1	52.4
	Agree Strongly	20	47.6	47.6	100.0
	Total	42	100.0	100.0	

<q3i> As a result of participating in the Program...my students made behavioral changes with regard to saving energy at our school.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	14.3	16.2	16.2
	Yes	31	73.8	83.8	100.0
	Total	37	88.1	100.0	
Missing	Refused	5	11.9		
Total		42	100.0		

<q4a> Rate your satisfaction with the process for developing an energy action plan for my school/district

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	3	7.1	7.1	7.1
	Somewhat Dissatisfied	6	14.3	14.3	21.4
	Somewhat Satisfied	21	50.0	50.0	71.4
	Very Satisfied	12	28.6	28.6	100.0
	Total	42	100.0	100.0	

<q4b> Rate your satisfaction with the process for working on school teams to implement the energy action plan

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	4	9.5	10.5	10.5
	Somewhat Dissatisfied	4	9.5	10.5	21.1
	Somewhat Satisfied	18	42.9	47.4	68.4
	Very Satisfied	12	28.6	31.6	100.0
	Total	38	90.5	100.0	
Missing	NA	4	9.5		
Total		42	100.0		

<q4c> Rate your satisfaction with the process for working with either EEPIC or SEI staff to implement the Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	4	9.5	9.8	9.8
	Somewhat Dissatisfied	5	11.9	12.2	22.0
	Somewhat Satisfied	19	45.2	46.3	68.3
	Very Satisfied	13	31.0	31.7	100.0
	Total	41	97.6	100.0	
Missing	NA	1	2.4		
Total		42	100.0		

<q4d> Rate your satisfaction with the quantity of ASE Green Schools Program resource materials provided to me relating to saving energy at school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	1	2.4	2.4	2.4
	Somewhat Dissatisfied	4	9.5	9.5	11.9
	Somewhat Satisfied	18	42.9	42.9	54.8
	Very Satisfied	19	45.2	45.2	100.0
	Total	42	100.0	100.0	

<q4e> Rate your satisfaction with the quality of ASE Green Schools Program resource materials provided to me relating to saving energy at school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	1	2.4	2.4	2.4
	Somewhat Dissatisfied	6	14.3	14.3	16.7
	Somewhat Satisfied	17	40.5	40.5	57.1
	Very Satisfied	18	42.9	42.9	100.0
	Total	42	100.0	100.0	

<q4f> Rate your satisfaction with the process for implementing community-based projects through the Student Advisory Council.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	2	4.8	6.3	6.3
	Somewhat Dissatisfied	9	21.4	28.1	34.4
	Somewhat Satisfied	15	35.7	46.9	81.3
	Very Satisfied	6	14.3	18.8	100.0
	Total	32	76.2	100.0	
Missing	NA	10	23.8		
Total		42	100.0		

<q4g> Rate your satisfaction with the overall experience of participating in the Green Schools Program.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	5	11.9	11.9	11.9
	Somewhat Dissatisfied	3	7.1	7.1	19.0
	Somewhat Satisfied	13	31.0	31.0	50.0
	Very Satisfied	21	50.0	50.0	100
	Total	42	100	100	

<q5a> As a result of participating in the GS Program, I...turned off computers that are not required to be on 24 hours a day.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	25	59.5	61.0	61.0
	No, But Plan To in 12 Mo	3	7.1	7.3	68.3
	No and Do Not Plan To in 12 Mo	1	2.4	2.4	70.7
	I Did So Even Before the GS Program	12	28.6	29.3	100.0
	Total	41	97.6	100.0	
Missing	Refused	1	2.4		
Total		42	100.0		

<q5b> As a result of participating in the GS Program, I...made sure that lights in classrooms are turned off when not in use.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	27	64.3	65.9	65.9
	No, But Plan To in 12 Mo	3	7.1	7.3	73.2
	No and Do Not Plan To in 12 Mo	1	2.4	2.4	75.6
	I Did So Even Before the GS Program	10	23.8	24.4	100.0
	Total	41	97.6	100.0	
Missing	Refused	1	2.4		
Total		42	100.0		

<q5c> As a result of participating in the GS Program, I...reported any equipment that is not working properly.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	61.9	66.7	66.7
	No, But Plan To in 12 Mo	3	7.1	7.7	74.4
	No and Do Not Plan To in 12 Mo	1	2.4	2.6	76.9
	I Did So Even Before the GS Program	9	21.4	23.1	100.0
	Total	39	92.9	100.0	
Missing	Dont Know	2	4.8		
	Refused	1	2.4		
	Total	3	7.1		
Total		42	100.0		

<q5d> As a result of participating in the GS Program, I...checked printers and copiers to be sure they are off before leaving the building.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	57.1	60.0	60.0
	No, But Plan To in 12 Mo	5	11.9	12.5	72.5
	No and Do Not Plan To in 12 Mo	4	9.5	10.0	82.5
	I Did So Even Before the GS Program	7	16.7	17.5	100.0
	Total	40	95.2	100.0	
Missing	Refused	2	4.8		
Total		42	100.0		

<q5e> As a result of participating in the GS Program, I...made sure personal lights and heaters that are brought into the classroom are turned off before leaving the school each day.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	61.9	70.3	70.3
	No, But Plan To in 12 Mo	1	2.4	2.7	73.0
	No and Do Not Plan To in 12 Mo	2	4.8	5.4	78.4
	I Did So Even Before the GS Program	8	19.0	21.6	100.0
	Total	37	88.1	100.0	
Missing	Dont Know	1	2.4		
	Refused	4	9.5		
	Total	5	11.9		
Total		42	100.0		

<q5f> As a result of participating in the GS Program, I...reported any time clocks that are not operating properly.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	33.3	50.0	50.0
	No, But Plan To in 12 Mo	6	14.3	21.4	71.4
	No and Do Not Plan To in 12 Mo	2	4.8	7.1	78.6
	I Did So Even Before the GS Program	6	14.3	21.4	100.0
	Total	28	66.7	100.0	
Missing	Dont Know	8	19.0		
	Refused	6	14.3		
	Total	14	33.3		
Total		42	100.0		

<q5g> As a result of participating in the GS Program, I...made sure that windows are closed and secured when heating or cooling equipment is operating.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	57.1	64.9	64.9
	No, But Plan To in 12 Mo	1	2.4	2.7	67.6
	No and Do Not Plan To in 12 Mo	2	4.8	5.4	73.0
	I Did So Even Before the GS Program	10	23.8	27.0	100.0
	Total	37	88.1	100.0	
Missing	Refused	5	11.9		
Total		42	100.0		

<q5h> As a result of participating in the GS Program, I...encouraged students to engage in energy conservatiaon behavior.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	36	85.7	87.8	87.8
	No and Do Not Plan To in 12 Mo	2	4.8	4.9	92.7
	I Did So Even Before the GS Program	3	7.1	7.3	100.0
	Total	41	97.6	100.0	
Missing	Refused	1	2.4		
Total		42	100.0		

<q5i> As a result of participating in the GS Program, I...encouraged teachers and administrators to follow my schools energy action plan.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	32	76.2	86.5	86.5
	No, But Plan To in 12 Mo	2	4.8	5.4	91.9
	No and Do Not Plan To in 12 Mo	3	7.1	8.1	100.0
	Total	37	88.1	100.0	
Missing	Refused	5	11.9		
Total		42	100.0		

Frequencies: Custodian Surveys

<part> Did you participate in a training workshop?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	100.0	100.0	100.0

<q1a> The training workshop increased my awareness of energy efficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	11.1	11.1	11.1
	Agree Somewhat	6	66.7	66.7	77.8
	Agree Strongly	2	22.2	22.2	100.0
	Total	9	100.0	100.0	

<q1b> The training workshop increased my awareness of ways to improve the energy efficiency of my school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	11.1	11.1	11.1
	Disagree Somewhat	1	11.1	11.1	22.2
	Agree Somewhat	3	33.3	33.3	55.6
	Agree Strongly	4	44.4	44.4	100.0
	Total	9	100.0	100.0	

<q1c> The training workshop increased my knowledge of possible no-cost behavioral/operations changes that could be implemented at my school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	11.1	11.1	11.1
	Agree Somewhat	4	44.4	44.4	55.6
	Agree Strongly	4	44.4	44.4	100.0
	Total	9	100.0	100.0	

<q2a> I thought it was a good idea to participate in the Program because I believed the Program would save energy for our school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	11.1	12.5	12.5
	Agree Somewhat	1	11.1	12.5	25.0
	Agree Strongly	6	66.7	75.0	100.0
	Total	8	88.9	100.0	
Missing	Refused	1	11.1		
Total		9	100.0		

<q2b> As a result of participating in the Program...I am more aware of energy efficiency and dways to save energy at my school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	11.1	12.5	12.5
	Agree Somewhat	2	22.2	25.0	37.5
	Agree Strongly	5	55.6	62.5	100.0
	Total	8	88.9	100.0	
Missing	Refused	1	11.1		
Total		9	100.0		

<q2c> As a result of participating in the Program...I am now more knowledgeable about EE and ways to save energy at my school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	11.1	12.5	12.5
	Agree Somewhat	2	22.2	25.0	37.5
	Agree Strongly	5	55.6	62.5	100.0
	Total	8	88.9	100.0	
Missing	Refused	1	11.1		
Total		9	100.0		

<q2d> As a result of participating in the Program...I now have a more positive attitude about energy efficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree Strongly	1	11.1	11.1	11.1
	Disagree Somewhat	1	11.1	11.1	22.2
	Agree Somewhat	1	11.1	11.1	33.3
	Agree Strongly	6	66.7	66.7	100.0
	Total	9	100.0	100.0	

<q3a> Rate your satisfaction with the process for developing an energy action plan for my school/district

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	2	22.2	22.2	22.2
	Somewhat Satisfied	4	44.4	44.4	66.7
	Very Satisfied	3	33.3	33.3	100.0
	Total	9	100.0	100.0	

<q3b> Rate your satisfaction with the process for working on school teams to implement the energy action plan

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	3	33.3	33.3	33.3
	Somewhat Dissatisfied	2	22.2	22.2	55.6
	Somewhat Satisfied	2	22.2	22.2	77.8
	Very Satisfied	2	22.2	22.2	100.0
	Total	9	100.0	100.0	

<q3c> Rate your satisfaction with the process for working with either EEPIC or SEI staff to implement the Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	2	22.2	25.0	25.0
	Somewhat Dissatisfied	1	11.1	12.5	37.5
	Somewhat Satisfied	4	44.4	50.0	87.5
	Very Satisfied	1	11.1	12.5	100.0
	Total	8	88.9	100.0	
Missing	NA	1	11.1		
Total		9	100.0		

<q3d> Rate your satisfaction with the quantity of ASE Green Schools Program resource materials provided to me relating to saving energy at school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	2	22.2	25.0	25.0
	Somewhat Satisfied	4	44.4	50.0	75.0
	Very Satisfied	2	22.2	25.0	100.0
	Total	8	88.9	100.0	
Missing	NA	1	11.1		
Total		9	100.0		

<q3e> Rate your satisfaction with the quality of ASE Green Schools Program resource materials provided to me relating to saving energy at school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Dissatisfied	2	22.2	25.0	25.0
	Somewhat Dissatisfied	1	11.1	12.5	37.5
	Somewhat Satisfied	3	33.3	37.5	75.0
	Very Satisfied	2	22.2	25.0	100.0
	Total	8	88.9	100.0	
Missing	NA	1	11.1		
Total		9	100.0		

<q3f> Rate your satisfaction with the overall experience of participating in the Green Schools Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Somewhat Dissatisfied	2	22.2	22.2	22.2
	Somewhat Satisfied	2	22.2	22.2	44.4
	Very Satisfied	5	55.6	55.6	100.0
	Total	9	100.0	100.0	

<q4a> As a result of participating in the GS Program, I...made sure that outside lights are turned off when not in use and that senors are working....

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	66.7	66.7	66.7
	I Did So Even Before the GS Program	3	33.3	33.3	100.0
	Total	9	100.0	100.0	

<q4b> As a result of participating in the GS Program, I...made sure that lights in closets and storage areas are turned off when not in use.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	77.8	77.8	77.8
	I Did So Even Before the GS Program	2	22.2	22.2	100.0
	Total	9	100.0	100.0	

<q4c> As a result of participating in the GS Program, I...made sure that lights in mechanical areas are turned off when not in use.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	77.8	77.8	77.8
	No, But Plan To in 12 Mo	1	11.1	11.1	88.9
	I Did So Even Before the GS Program	1	11.1	11.1	100.0
	Total	9	100.0	100.0	

<q4d> As a result of participating in the GS Program, I...checked classroom lights and turned them off when not needed.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	66.7	66.7	66.7
	No, But Plan To in 12 Mo	1	11.1	11.1	77.8
	I Did So Even Before the GS Program	2	22.2	22.2	100.0
	Total	9	100.0	100.0	

<q4e> As a result of participating in the GS Program, I...checked for obstructions in front of ventilation units.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	55.6	55.6	55.6
	No, But Plan To in 12 Mo	1	11.1	11.1	66.7
	I Did So Even Before the GS Program	3	33.3	33.3	100.0
	Total	9	100.0	100.0	

<q4f> As a result of participating in the GS Program, I...reported any equipment that is not working properly.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	55.6	55.6	55.6
	I Did So Even Before the GS Program	4	44.4	44.4	100.0
	Total	9	100.0	100.0	

<q4g> As a result of participating in the GS Program, I...reported leaking faucets and other water-related items.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	55.6	55.6	55.6
	I Did So Even Before the GS Program	4	44.4	44.4	100.0
	Total	9	100.0	100.0	

<q4h> As a result of participating in the GS Program, I...checked thermostat settings, if appropriate.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	55.6	62.5	62.5
	I Did So Even Before the GS Program	3	33.3	37.5	100.0
	Total	8	88.9	100.0	
Missing	Dont Know	1	11.1		
Total		9	100.0		

<q4i> As a result of participating in the GS Program, I...checked modular/re-locatable/temporary classroom units to be sure that lights are turned off.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	33.3	42.9	42.9
	No, But Plan To in 12 Mo	1	11.1	14.3	57.1
	I Did So Even Before the GS Program	3	33.3	42.9	100.0
	Total	7	77.8	100.0	
Missing	Refused	2	22.2		
Total		9	100.0		

<q4j> As a result of participating in the GS Program, I...reported any time clocks that are not operating properly.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	66.7	75.0	75.0
	I Did So Even Before the GS Program	2	22.2	25.0	100.0
	Total	8	88.9	100.0	
Missing	Refused	1	11.1		
Total		9	100.0		

<q4k> As a result of participating in the GS Program, I...made sure that windows are closed and secured when heating or cooling equipment is operating.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	55.6	62.5	62.5
	I Did So Even Before the GS Program	3	33.3	37.5	100.0
	Total	8	88.9	100.0	
Missing	Dont Know	1	11.1		
Total		9	100.0		

<q4l> As a result of participating in the GS Program, I...encouraged students to engage in energy conservatiaon behavior.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	33.3	42.9	42.9
	No, But Plan To in 12 Mo	1	11.1	14.3	57.1
	I Did So Even Before the GS Program	3	33.3	42.9	100.0
	Total	7	77.8	100.0	
Missing	Dont Know	2	22.2		
Total		9	100.0		

<q4m> As a result of participating in the GS Program, I...encouraged teachers and administrators to follow my schools energy action plan.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	55.6	62.5	62.5
	No, But Plan To in 12 Mo	1	11.1	12.5	75.0
	I Did So Even Before the GS Program	2	22.2	25.0	100.0
	Total	8	88.9	100.0	
Missing	Dont Know	1	11.1		
Total		9	100.0		

APPENDIX D

EVALUABILITY ASSESSMENT RESULTS

PHASE I EVALUABILITY ASSESSMENT MEMORANDUM

To:	Merrilee Harrigan, ASE; Martha Lake, ASE; Brooke Peterson, SDREO
From:	Angela Jones, Vanward Consulting
CC:	Rick Ridge, Ridge & Associates; Mary Sutter, Equipoise Consulting Inc; Shel Feldman, Shel Feldman Management Consulting
Date:	6/12/03
Re:	ASE/SDREO Green Schools Green Communities Program Evaluability Assessment

The purpose of this memo is to review the results of the evaluability assessment and the program and implementation theories that were developed to guide the evaluation of the ASE/SDREO Green Schools Green Communities Programs. The Green Schools Green Communities Program (GSGC) focuses on saving energy in schools by providing project-based and other integrated learning opportunities and teaching students about energy and the opportunities to save energy both at school, in the community, and in their homes. The program engages teams of students, teachers, administrators, facilities staff, and students in understanding and addressing efficiency and conservation opportunities in schools and operations.

Some authors (Rogers et al, 2000) have posited two very basic types of theories that can be used in program evaluation: 1) implementation theory, and 2) program theory. DSM implementation theory depicts the basic flow and mechanics of the program consisting of a sequence of activities that begin with program outreach and end with customers' adoption of recommended measures and/or practices. The *implementation theory* tells the evaluator *how* the program is supposed to operate in the field. In a process evaluation, the evaluator can examine the field implementation of a program to determine if there are any significant deviations from the intended program design. If there are, the evaluator can explore why these deviations occurred and what they imply regarding the achievement of any of the expected outcomes. The *program theory* seeks to explain *why* the program activities (i.e., the underlying mechanisms) are expected to lead to the achievement of immediate, intermediate, and long-term outcomes. Weiss (1997) stresses that understanding the underlying theory of the program is essential to developing the most appropriate evaluation, and that a good evaluation is based on defining and analyzing the assumptions of the program theory. In general, the program theory provided here consists of GSGC activities and the hypothesized direct and indirect causal linkages between these activities and the desired impacts. There are many different areas in which programs can go astray but, by focusing on program theory, evaluators can keep themselves on track and provide a meaningful assessment. Accordingly, the evaluability assessment, which outlines the proposed evaluation tasks and

objectives to be addressed in Phase II, is derived based on the causal linkages identified in both the implementation and program theories.

Green Schools Green Communities Program Goals and Objectives

The purpose of the Green Schools Green Communities Program is two-fold:

1. to reduce energy costs in schools, and
2. to educate students and their families about energy and the link between efficiency, the environment, and finances.

It is a comprehensive and long-term approach to school energy efficiency, bringing together the facility, instructional and administrative staff members, and students in a cooperative effort to improve education, using energy as a tool. Energy savings are achieved through no-cost behavioral and operations changes. A percentage (usually one-half) of the dollar savings due to the no cost behavioral and operations changes are returned to the individual schools that achieved the savings, with the remainder going to the general district facilities budget. The returned savings can be used to purchase books, computers, fund field trips and other educational activities, as determined by the principal with input from school teams. Students are integrally involved in the efficiency activities, from energy patrols to conducting in-depth school audits. Classroom activities include instruction, energy saving activities, and interaction with others from the school and broader community. The GSGC instructional materials are correlated to the California Department of Education standards so they will be easy for teachers to use to strengthen student academic learning.

For the 2002-2003 program years, the schools programs are being offered by ASE in the PG&E and SCE territories and by SDREO in the SDG&E service territory. The local programs have specific emphasis on involving hard-to-reach customer populations; however, each program has set different goals with respect to assessing the achievement of this program objective.

The GSGC has set forth seven program goals and objectives:

1. Provide energy focused, project-based and other integrated learning opportunities for students. (The idea is to make the program educationally valuable to student learning so that teachers will use energy as a learning tool and create continuing value of the program and program sustainability.)
2. Engage teams of students, teachers, administrators, and facilities staff in understanding and addressing efficiency and conservation opportunities in schools and operations.
3. Achieve immediate and persistent energy savings through no-cost behavioral and operations changes and comparisons to baselines.
4. Increase awareness and understanding of energy efficiency and its relationship to the environment and finances.
5. Increase energy savings at K-12 school facilities.

6. Increase energy awareness and savings in the community and, when possible, in the students' homes.
7. Pursue opportunities to align with other programs to supplement current educational activities.

The programs have established the following metrics to assess the achievement of identified program goals:

- Number of schools recruited to participate in the program in the first and second years of implementation.
- Achievement of stated hard-to-reach (HTR) efforts and goals.
- Other levels of program participation including: numbers of staff, teachers, and administrators who participate; number of school audits completed; and, number of no-cost energy improvements adopted.

CPUC Mandated Evaluation Objectives

The CPUC has ordered independent evaluation, measurement, and verification (EM&V) Studies for all local programs according to the guidelines laid forth in the November 2001 Energy Efficiency Policy Manual. Accordingly, a basic measurement and evaluation study to examine the effectiveness of the 2002-03 ASE and SDREO programs must accomplish the Commission's EM&V objectives for information-only programs. Therefore, the evaluability assessment that follows addresses the following evaluation objectives in addition to (or in conjunction with) the metrics established by the ASE and SDREO:

- Provide on-going feedback, and corrective and constructive guidance regarding the implementation of the programs.
- Measure indicators of program effectiveness, including the testing of assumptions that underlie the program theory and approach, and changes in individual awareness and behavior due to the programs.
- Assess the overall levels of performance and success of the programs.
- Help to assess whether there is a continuing need for the programs and make recommendations for possible modifications or improvements.

Evaluability Assessment

The focus of this assessment is (and the Phase II evaluation would be) on program objectives 1-6 in that they are associated with specific project activities and outcomes that relate to program effectiveness and performance. Objective 7 deals more with general program or administration activities that might enhance the design of the program, and while progress in this area may be described and documented, these activities are not the core activities underlying the theory of why the GSGC activities are expected to increase participants' awareness of energy efficiency opportunities or lead to immediate (and, ultimately, persistent or long term) energy savings as a result of changes in behavior and practices.

GSGC Implementation and Program Theories

The implementation theory, presented in Figure 1, attempts to distill from the program documentation the essential elements of how the program operates in the field and the resultant impacts that occur if these elements are properly implemented. In Table 1, we identify, for each linkage, the type of analysis proposed and outline the corresponding evaluation activities that could be used to complete the indicated analysis.

The program theory, presented in Figure 2, attempts to uncover the underlying implicit causal relationships between the GSGC activities, intervening variables, program outputs, and the desired impacts or outcomes. In Table 2, we also identify, for each linkage, the type of analysis proposed and outline the corresponding evaluation activities that could be used to complete indicated type of analysis.

For each type of analysis identified, we indicate our assessment of the evaluation priority for this analysis. The next step is for the ASE and SDREO to review the program and implementation theories in Figures 1 and 2 to confirm that the theories adequately and accurately represent the GSGC and determine which linkages are the most critical to address in the evaluation. Similarly, in reviewing the evaluability assessments in Tables 1 and 2, the idea is to prioritize the evaluation tasks based on the evaluation objectives and available budgets. This is necessary because evaluation budgets are limited, which forces one to decide which linkages are the most important to study. Those linkages that are *most critical* in the theoretical model are obvious candidates, and, of these, those linkages about which there is the *greatest uncertainty* deserve the greatest attention. Once final agreement on the prioritization of analysis activities is complete, the Phase II research tasks can be finalized and incorporated into a formal evaluation plan (and budget) to be delivered as part of the Phase I evaluability assessment.

Figure 1. GSGC Implementation Theory

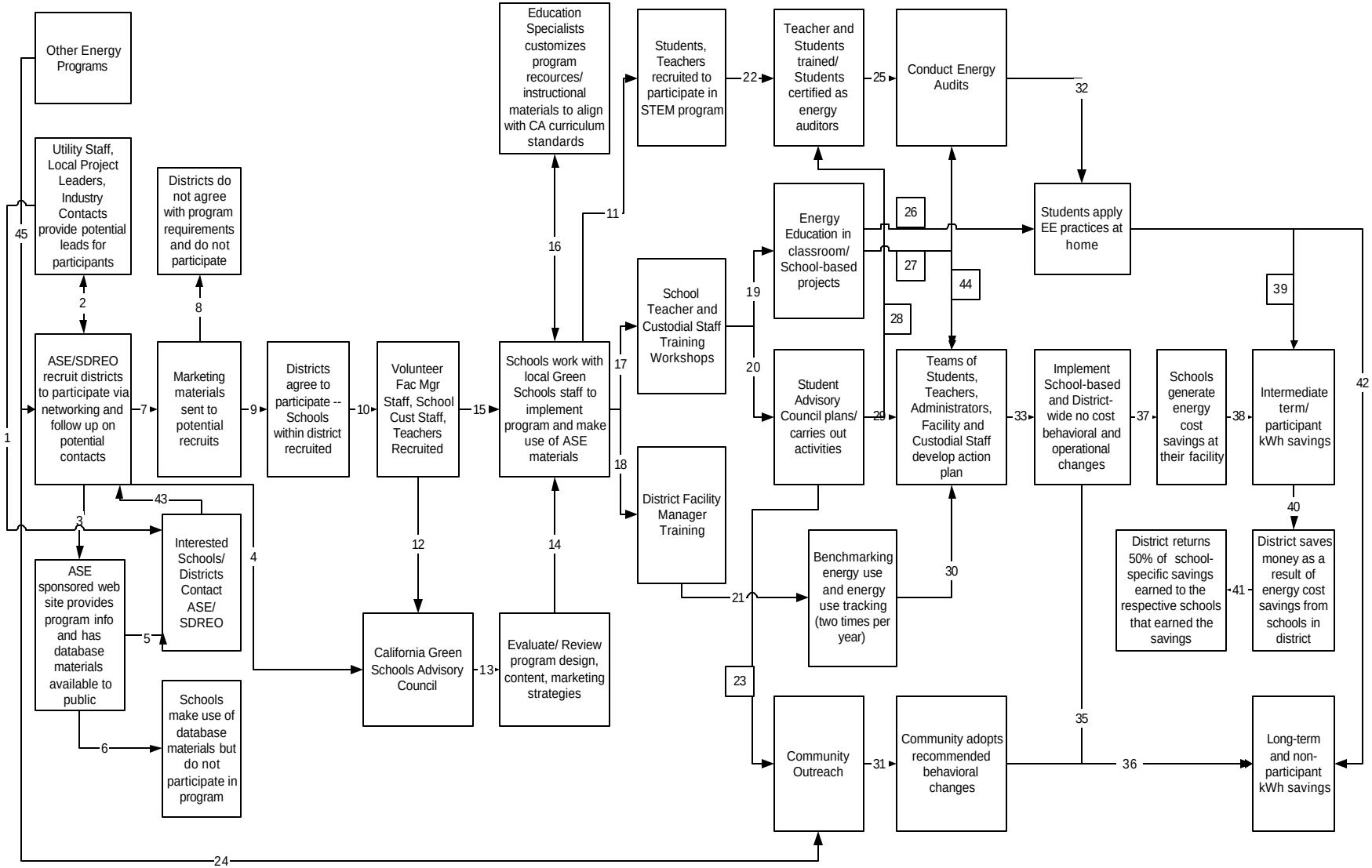

Table 1. Evaluability Assessment – Implementation Theory

			IMPLEMENTATION THEORY
PRIORITY	**LINKAGE**	**TYPE OF ANALYSIS PLANNED**	**SPECIFIC TOPIC OF RESEARCH**
High	1-4, 6-7, 11-14, 16-17, 19-21, 24, 26-30, 33, 45	Descriptive and Documentation	Specific counts along with descriptions and any documentation of specific activities will occur at these linkages. This information will be used to construct a comprehensive program description and review and is expected to provide the bulk of its information through appendices in the final report. Specifically, the Phase II analysis tasks could include descriptions, documentation, and counts of the following, as appropriate: types of recruitment methods and how schools/districts learn about and make contact with the GSGC program; ASE web site and counts of the number of web site hits and click patterns, if available; the role of the California Green Schools Advisory Council; marketing/recruitment efforts and program materials used; key program elements such as the STEM program, teacher and staff workshops, school- and community-based projects and activities, benchmarking and energy tracking activities, and the school and district energy action plans; inter-organizational exchange of resources with other programs such as PG&E's School Resources Program and Rebuild America; and, GSGC Community outreach activities.
High	4, 9, 10, 19-20, 25, 27-28, 29, 33, 44	Verification	Per the metrics established by the ASE and SDREO, the activities in these linkages will be verified. This task will entail documenting and giving specific counts of relevant activities to confirm that program goals were met. Analysis activities could include a verification of the following metrics: number of schools recruited; achievement of stated HTR goals; number of school audits completed; and the number of no-cost behavioral and operations energy improvements implemented.
Medium to High	19, 20, 21, 23, 25, 30, 32, 44	Verification	As a means of documenting all program activities, to verify accuracy of information provided through the program, and in order to assess overall program performance and the continuing need for the program, the Phase II evaluation will verify the activities and outcomes associated with these linkages. Analysis activities could include: a review of STEM tools used and audit results provided; verification and counts of community outreach activities, student advisory committee activities, and the number of STEM audits completed at students' homes; verification of benchmarking and energy tracking activities, energy saved in the schools, and a review of the algorithms used to derive these savings estimates; and, a verification of the number of school/district-wide plans developed.

High	2-3, 5, 43, 7, 9-11, 15-18, 22, 25, 29, 30, 32,	Process	The aim of the process evaluation is to assess the effectiveness of program processes and provide ongoing feedback and corrective and constructive guidance that can be used to improve future program design. This aspect of the evaluation is designed to meet the CPUC mandated evaluation objectives. Tasks could include: interviews with district and school administrators and staff to investigate the effectiveness of various program processes such as the types of recruitment methods used, how they learned about or were contacted by the GSGC program, the process for participating in the program, training workshops, school and community based activities, the STEM program, developing the school/district-wide action plan, and the process for conducting the benchmarking and energy tracking activities; and, a review of all workshop/training evaluation results to assess participant satisfaction with workshop/training activities.
High	8, 41	Process	The objective of this analysis is to look at barriers to participation and the affect on staff/teacher motivation of providing/reneging on this incentive after the school participated in the program. So, if a school saves energy, we will determine if the school did, in fact, receive 50% of the savings from the district. (Note that linkages 37, 38, and 40 will be examined as part of the impact evaluation as indicated in the program theory -- linkages 5, 6, and 7).
Low	31, 35-36, 42, 39	None	These linkages represent long-term program effects, which cannot be assessed within the current program and evaluation period; or, relate to the substantiation or measurement of achieved kWh savings due to the program, which is not an evaluation requirement for information-only programs.

Figure 2. GSGC Program Theory

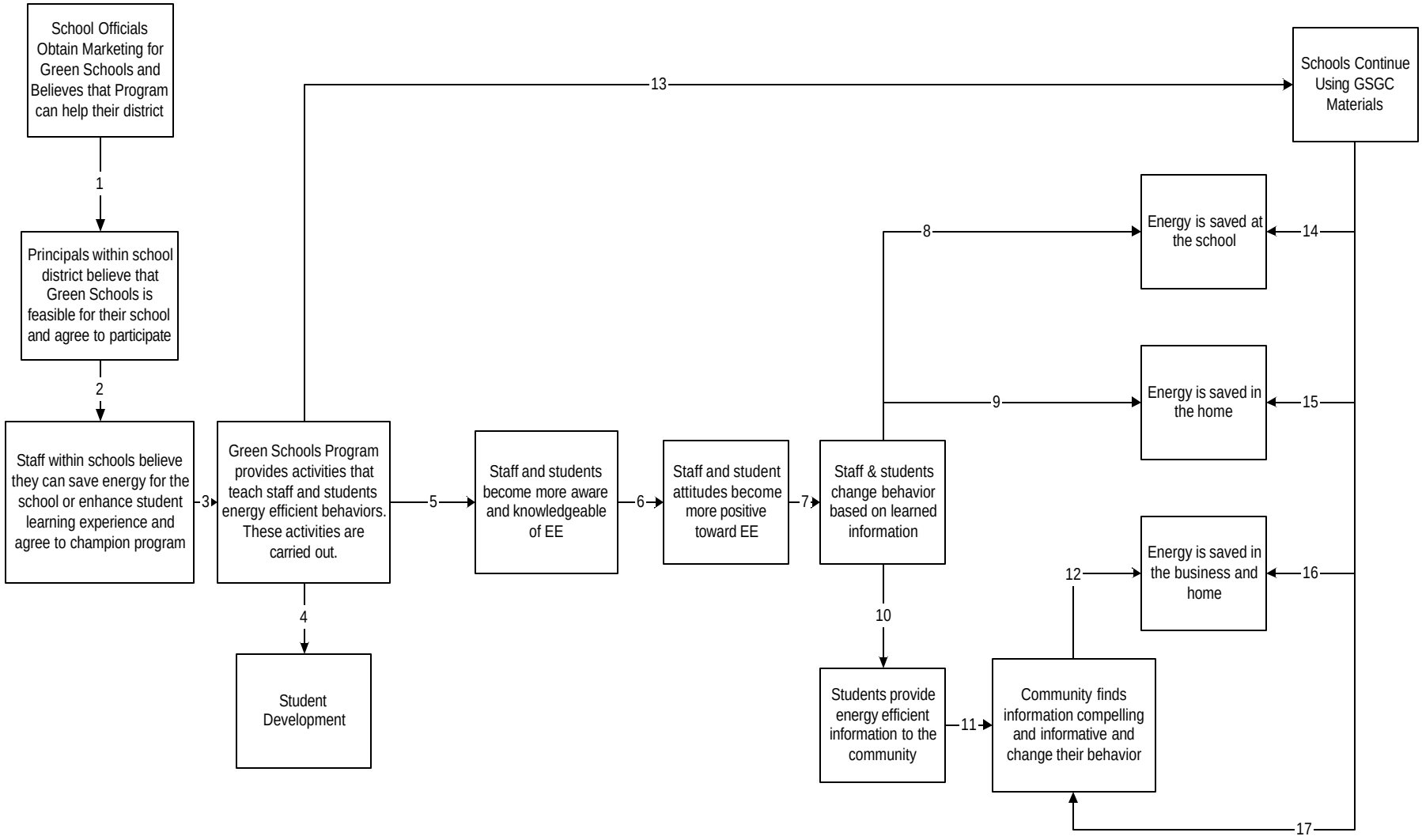

Table 2. Evaluability Assessment – Program Theory

			PROGRAM THEORY
PRIORITY	**LINKAGE**	**TYPE OF ANALYSIS PLANNED**	**SPECIFIC TOPIC OF RESEARCH**
High	1, 2, 3	Impact	Information obtained through interviews with district/school administrators, teachers, and staff could be used to evaluate the immediate program impacts that result from: recruiting schools and teachers to participate in the program; using program supplied resources; and, carrying out program activities in the district and schools.
High	5, 6, 7	Impact	Per CPUC mandated evaluation requirements, the Phase II evaluation must measure indicators of program effectiveness, including the testing of assumptions that underlie the program theory and approach, and changes in individual awareness and behaviors as a result of the program. The proposed analysis identified here, addresses this requirement. The analysis tasks could include: a review of STEM pre/post tests; and, conducting participant surveys to assess changes in awareness/behaviors among faculty, administrators, custodial staff, facility managers, and students, if possible.
Medium to High	8, 9, 11, 12	Impact	The purpose of this analysis is to verify the impacts of the program in an effort to test the assumptions underlying the program theory and approach. The analysis tasks will include a verification of the number of no-cost behavioral and operations energy improvements implemented; a review of the benchmarking and energy tracking results and reporting of school/district savings, and student self-reports regarding activities implemented in the home and through their efforts in the community. (Note, in assessing links 9 and 11, we would only be reporting on behaviors, as feasible; this analysis task does not entail measuring actual savings earned in the students' homes or in the greater community.)
Medium	10	Verification	Information from implementation theory links will be used to document the outcomes related to this program theory link.
Low	4, 13, 14, 15, 16, 17	None	These linkages represent long-term program effects, which cannot be assessed within the current program and evaluation period; or, relate to the substantiation or measurement of achieved kWh savings due to the program, which is not an evaluation requirement for information-only programs. Any follow-up studies should pay special attention to these linkages.

APPENDIX E

PROGRAM ACTIVITY DETAILS

PG&E SCHOOL PROFILES

District Information County	Schools Information	HTR Zip Code	School Enroll	Enrollment by Ethnicity Top 3	Language Preference reflected by: Percentage of English Learners	% Free & Reduced Price Meals	% Calworks	Tile One
Vallejo City School District 211 Valle Vista Vallejo, CA 94590-3256 Solano County	Pennycooke Elementary 3620 Fernwood Ave. Vallejo, CA 94590	94590 HTR	665	31.0% White, not Hispanic 27.7% African American 17.7 % Filipino	E.L. population percentage by language: 47% Spanish 28% Pilipino (Tagalog) E.L. percentage of enrollment 4.2% - Spanish 3.1% Pilipino (Tagalog)	34.0%	8.1%	No
	Federal Terrace Elementary 415 Daniels St. Vallejo, CA 94590-3040	94590 HTR	610	34.5% African American 23.4% Hispanic 21.6 % White	E.L. population percentage by language: 67.3% Spanish 24.5% Filipino E.L. percentage of enrollment 12.1% Spanish 4.4% Filipino	58.5%	19.9%	Yes
San Mateo Union High School District San Mateo County	Hillsdale High School 3115 del Monte Street San Mateo, CA 94403	94403 HTR	1,119	56.4% White, not Hispanic 21.5% Hispanic/Latino 13.4% Asian	E.L. population percentage by language: 58.7% Spanish E.L. percentage of enrollment: 10.6% Spanish	4.4%	1.2%	No

District Information County	Schools Information	HTR Zip Code	School Enroll	Enrollment by Ethnicity Top 3	Language Preference reflected by: Percentage of English Learners	% Free & Reduced Price Meals	% Calworks	Tile One
Petaluma City Elementary USD 200 Douglas St. Petaluma, CA 94952 Sonoma County	Valley Vista Elementary 730 N. Webster St. Petaluma, CA 94952-1798	94952	396	68.9% White 27.5% Hispanic/Latino	E.L. population percentage by language: 97.5% Spanish E.L. percentage of enrollment 19.8% Spanish	25.6%	1.8%	No
	Mary Collins Elementary 1001 Cherry St. Petaluma, CA 94952-2065	94952	254	81.9% White 10.2% Hispanic/Latino	E.L. population percentage by language: 97.5% Spanish E.L. percentage of enrollment 3.5% Spanish	n/a	n/a	No

District Information County	Schools Information	HTR Zip Code	School Enroll	Enrollment by Ethnicity Top 3	Language Preference reflected by : Percentage of English Learners	% Free & Reduced Price Meals	% Calworks	Tile One
Petaluma Joint Union High SD 200 Douglas St. Petaluma, CA 94952-2575 Sonoma County	Petaluma Junior High 700 Bantam Way Petaluma, CA 94952-1709	94952	810	80.1% White 16.2% Hispanic/Latino 1.5% Asian	E.L. population percentage by language: 90.2% Spanish 6.2% Portuguese E.L. percentage of enrollment 6.8% Spanish	13.9%	1.4%	Yes
	Casa Grande High School 333 Casa Grande Road Petaluma, CA 94954-5706	94954 HTR	1,726	73.1% White 18.3% Hispanic 5.0% Asian	E.L. population percentage by language: 82.2% Spanish E.L. percentage of enrollment 8.7% Spanish	8.6%	1.8%	No
Tamalpais Union 395 Doherty Dr. Larkspur, CA 94977-0605 Marin County	Tamalpais High School 700 Miller Ave. Mill Valley, CA 94941-2926	94941	1028	72.3% White 6.6%Hispanic/Latino 6.2% African American	E.L. population percentage by language: 52.0% Spanish 8.0% - multiple languages E.L. percentage of enrollment 1.3% Spanish	3.6%	1.5%	Yes

District Information County	Schools Information	HTR Zip Code	School Enroll	Enrollment by Ethnicity Top 3	Language Preference reflected by : Percentage of English Learners	% Free & Reduced Price Meals	% Calworks	Tile One
Jefferson Unified 101 Lincoln Ave. Daly City, CA 94015-3934 San Mateo County	MP Brown Elementary 305 Eastmoor Ave. Daly City, CA 94015-2038	94015 assert HTR	359	40.9% Hispanic/Latino 35.1% Filipino 8.4% White	E.L. population percentage by language: 47.5% Spanish 28.1% Pilipino E.L. percentage of enrollment 18.4% Spanish 10.9% Pilipino	47.1%	4.7%	No
Jefferson Unified 101 Lincoln Ave.	Marjorie Tobias 725 Southgate Ave. Daly City, CA 94015-3659	94015 assert HTR	302	26.2% Filipino 26.5% Asian 15.9% White	E.L. population percentage by language: 31.7% Cantonese 18.3% Pilipino 16.7% Spanish E.L. percentage of enrollment 6.3% Cantonese 3.6% Pilipino 3.3% Spanish	30.8%	1.7%	No

District Information County	Schools Information	HTR Zip Code	School Enroll	Enrollment by Ethnicity Top 3	Language Preference reflected by : Percentage of English Learners	% Free & Reduced Price Meals	% Calworks	Tile One
Daly City, CA 94015-3934 San Mateo County	Thomas Edison Elementary 1267 Southgate Ave. Daly City, CA 94015-3920	94015 assert HTR	420	40.5% Filipino 18.8% Asian 14.0% Hispanic/Latino	E.L. population percentage by language: 26.3% Spanish 24.2% Pilipino 22.1% Cantonese E.L. percentage of enrollment 18.4% Spanish 10.9% Pilipino	31.4%	1.7%	No
	John F Kennedy Elementary 785 Price St. Daly City, CA 94014-2163	94014 assert HTR	485	40.8% Hispanic/Latino 37.3% Filipino 4.9% Asian	E.L. population percentage by language: 75.9% Spanish 20.4% Ilocano E.L. percentage of enrollment 16.9% Spanish	52.0%	2.7%	No

District Information County	Schools Information	HTR Zip Code	School Enroll	Enrollment by Ethnicity Top 3	Language Preference reflected by : Percentage of English Learners	% Free & Reduced Price Meals	% Calworks	Tile One
West Sonoma County Union 462 Johnson St. Sebastopol, CA 95472 Sonoma County	Analy High School 6950 Analy Ave. Sebastopol, CA 95472-3401	95472	1,383	79.2% White 9.3% Hispanic/Latino 1.3% Asian	E.L. population percentage by language: 85.2% Spanish 5.6% Other non-English E.L. percentage of enrollment 3.3% Spanish	n/a	0.9%	No
	El Molino High School 7050 Covey Road Forestville, CA 95436-9642	95436	1097	82.0% White 11.6% Hispanic/Latino	E.L. population percentage by language: 91.9% Spanish 3.6% French E.L. percentage of enrollment 4.6% Spanish	18.7%	3.5%	no
	Laguna Continuation High 462 Johnson St. Sebastopol, CA 95472-3473	95472	108	67.6% White 20.4% Hispanic/Latino 4.6% American Indian or Alaskan Native	E.L. population percentage by language: 100% Spanish E.L. percentage of enrollment 14.8% Spanish	16.2%	0%	No

District Information County	Schools Information	HTR Zip Code	School Enroll	Enrollment by Ethnicity Top 3	Language Preference reflected by : Percentage of English Learners	% Free & Reduced Price Meals	% Calworks	Tile One
Santa Rosa High School District 211 Ridgeway Ave. Santa Rosa, CA 95401-4320 Sonoma County	Montgomery High School 1250 Hahman Dr. Santa Rosa, CA 95405-6934	95405		70.3% White 17.3% Hispanic/Latino 4.4% Asian	E.L. population percentage by language: 82.2% Spanish 4.6% Korean 3.9% Cambodian E.L. percentage of enrollment 6.9% Spanish	12.5%	2.4%	No
Bennett Valley 2250 Mesquite Dr. Santa Rosa, CA 95405-8310 Sonoma County	Yalupa Elementary 2250 Mesquite Dr. Santa Rosa, CA 95405-8310	95405	518	74.2% White 14.1% Hispanic/Latino 6.4% Asian	E.L. population percentage by language: 81.6% Spanish 5.3% Korean 5.3% Mandarin E.L. percentage of enrollment 5.7% Spanish	14.3%	2.1%	No
Bellevue Union 3223 Primrose Ave. Santa Rosa, CA 95407-7723 Sonoma County	Bellevue Elementary 3223 Primrose Avenue Santa Rosa, CA 95407	94507 assert HTR	583	66.0% Hispanic/Latino 21.9% White 4.2% Asian	E.L. population percentage by language: 94.5% Spanish 2.0% Lao E.L. percentage of enrollment 59.3% Spanish	89.7%	7.4%	Yes

District Information County	Schools Information	HTR Zip Code	School Enroll	Enrollment by Ethnicity Top 3	Language Preference reflected by : Percentage of English Learners	% Free & Reduced Price Meals	% Calworks	Tile One
	Kawana Elementary 3121 Moraga Drive Santa Rosa, CA 95404	95404 assert HTR	633	66.2% Hispanic/Latino 21.3% White 4.7% Asian	E.L. population percentage by language: 92.0% Spanish 3.4% Lao E.L. percentage of enrollment 56.1% Spanish 2.1% Lao	88.7%	10.3%	Yes

Disclosure of Data Source:

Demographic Data information obtained from The Educational Demographics Office that collects, analyzes and disseminates demographic data about California's public schools and school districts. The office supports the California Basic Educational Data System, the Language Census, and the California School Information Services (CSIS) initiative http://www.cde.ca.gov/demographics/

Educational Demographics Office
P.O. Box 944272
Sacramento, California 94244-2720

Telephone Number (916) 327-0219

SCE SCHOOL PROFILES

District Information	**Schools Information**	**HTR Zip Code**	**Total School Enrollment**	**Enrollment by Ethnicity Top 3**	**Language Preference reflected by : Percentage of English Learners**	**Percentage of enrolled Free & Reduced Price Meals**	**Percentage of enrolled CalWORKS Formerly AFDC**	**Title One**
Rialto USD **182 E. Walnut Ave. Rialto, California 92376**	Boyd Elementary 310 E. Merrill St. Rialto, CA 92376	HTR 92376	657	80.8% Hispanic/Latino 9.6% African American 7.5% White, not Hispanic	E.L. population percentage by language: 96.9% Spanish Percentage of enrollment: 37.4% Spanish	77.9%	12.9%	yes
	Curtis Elementary 451 S. Lilac Ave. Rialto, CA 92376	HTR 92376	1,019	76.2% Hispanic 14.7% African American 7.3% White	E.L. population percentage by language: 98.4% Spanish Percentage of enrollment: 36.4% Spanish	81.2%	17.2%	Yes
	Dollahan Elementary 1060 W. Etiwanda Ave. Rialto, CA 92376	HTR 92376	874	58.2% Hispanic/Latino 30.1% African American 8.1% White, not Hispanic	E.L. population percentage by language 95.5% Spanish Percentage of enrollment: 14.0% Spanish	65.6%	11.1%	yes

	Hughbanks Elementary 2241 N. Apple Ave. Rialto, CA 92377	92377	820	44.8% Hispanic/Latino 37.4% African American 15.7% White, not Hispanic	E.L. population percentage by language 99.0% Spanish Percentage of enrollment: 12.4% Spanish	49.6%	11.5%	No
	Trapp Elementary 2750 N. Riverside Ave. Rialto, CA 92377	92377	714	48.6% Hispanic/Latino 32.6% African American 15.0% White, not Hispanic	E.L. population percentage by language 95.1% Spanish Percentage of enrollment 13.6% Spanish	58.3%	13.3%	No

District Information **Rialto USD** **182 E. Walnut Ave. Rialto, CA 92376**	Frisbie Middle 1442 N. Eucalyptus Ave. Rialto, CA 92376	HTR 92376	1,530	60.1 Hispanic/Latino 29.0% African American 8.2% White	E.L. population percentage by language: 94.7% Spanish Percentage of enrollment: 22.7 Spanish	79.2%	21.3%	Yes

	Schools Information	**HTR Zip Code**	**Total School Enrollment**	**Enrollment by Ethnicity Top 3**	**Language Preference reflected by : Percentage of English Learners**	**Percentage of enrolled Free & Reduced Price Meals**	**Percentage of enrolled CalWORKS Formerly AFDC**	**Title One**
	Kolb Middle 2351 N. Spruce St. Rialto, CA 92377	92377	1,477	48.9% Hispanic/Latino 35.8% African American 13.1% White, not Hispanic	E.L. population percentage by language 97.6% Spanish Percentage of enrollment: 16.4% Spanish	65.9%	15.0%	No
	Morris Elementary 1900 W. Randall Ave. Colton, CA 92324	92324	865	75.1% Hispanic/Latino 16.4% African American 5.0% White, not Hispanic	E.L. population percentage by language 96.1% Spanish Percentage of enrollment 31.6% Spanish	69.5%	6.1%	Yes
	Jehue Middle 1500 N. Eucalyptus Ave Colton, CA 92324	92324	1,676	69.3% Hispanic/Latino 17.1% African American 9.7% White, not Hispanic	E.L. population percentage by language 94.8% Spanish Percentage of enrollment 20.8% Spanish	63.8%	10.4%	Yes

	Rialto High 595 S. Eucalyptus Ave. Rialto, CA 92376	92376	3,977	64.6% Hispanic/Latino 21.6% African American 10.1% White, not Hispanic	E.L. population percentage by language 94.8% Spanish Percentage of enrollment 22.0% Spanish	57.9%	10.0%	no

San Bernardino **County Office of Education** **601 North E Street** **San Bernardino, CA 92410**	Fontana Community Day School 1611 Arrow Fontana, CA 92355	92355	**No Data is available for this site.**

District <u>Information</u>	**Schools Information**	**HTR Zip Code**	**Total School Enrollment** **Potential Program Outreach**	**Enrollment by Ethnicity** **Top 3**	**Language Preference reflected by :** **Percentage of English Learners & School Support**	**Percentage of enrolled** **Free & Reduced Price Meals**	**Percentage of enrolled** **CalWORKS** **Formerly AFDC**	**Title One**

Yucaipa-Calimesa Joint USD **12797 Third St.** **Yucaipa, CA 92399-4544**	Calimesa Elementary 13523 Second St. Yucaipa, CA 92399	92399	669	72.6% White, not Hispanic 23.3% Hispanic/Latino 1.2% African American	E.L. population percentage by language 98.4% Spanish Percentage of enrollment 9.0% Spanish	42.8%	9.6%	no
	Canyon Middle 35948 Susan Street Yucaipa, CA 92399	92399	449	81.1% White, not Hispanic 16.7% Hispanic/Latino .9% Asian	E.L. population percentage by language 100% Spanish Percentage of enrollment 1.1% Spanish	21.2%	4.5%	no
	Parkview Middle 34875 Tahoe Dr. Yucaipa, CA 92399	92339	1,112	70.1% White, not Hispanic 25.4% Hispanic/Latino 1.7% African American	E.L. population percentage by language 97.4% Spanish Percentage of enrollment 6.7% Spanish	40.1%	4.9%	no

Southern CA Private School District	Ambassador Christian Elementary, Middle, High 8405 Maple Fontana, CA 92335	HRT 92335	300	N/A	N/A	N/A	N/A	N/A

Redlands USD **20 W. Lugonia** **Redlands, CA 92373**	Redlands High School 840 E. Citrus Ave. Redlands, CA 92374	92374	2,927	46.4% White, not Hispanic 26.2% Hispanic/Latino 13.7% Asian	E.L. population percentage by language 43.3% Spanish 17.9% Indonesian 7.5% Cambodian Percentage of enrollment: 5.3% Spanish 2.2% Indonesian	27.6%	9.7%	no

District <u>Information</u>	**Schools Information**	**HTR Zip Code**	**Total School Enrollment** **Potential Program Outreach**	**Enrollment by Ethnicity** **Top 3**	**Language Preference reflected by :** **Percentage of English Learners & School Support**	**Percentage of enrolled** **Free & Reduced Price Meals**	**Percentage of enrolled** **CalWORKS** **Formerly AFDC**	**Title One**
San Bernardino City USD **777 North F St.** **San**	Serrano Middle School 3131 Piedmont Drive Highland, CA 92346	HTR 92376	1,206	42.6% Hispanic/Latino 28.6% White, not Hispanic 22.2% African American	E.L. population percentage by language 92% Spanish Percentage of enrollment: 14.3% Spanish	66.7%	20.0%	yes

Bernardino CA 92410-3017 **(909)381-1100**	Belevedere Elementary 2501 E. Marshall Blvd. Highland, CA 92346	HTR 92346	861	55.6% Hispanic/Latino 29.6 White 10.2% African American	E.L. population percentage by language 92.8% Spanish 2.6% Arabic percentage of enrollment 28.5% Spanish	63.6%	8.0%	yes
	San Gorgonio High 2299 E. Pacific Ave. San Bernardino, CA 92404	HRT, 92404	2,874	49.1% Hispanic/Latino 25.0% White, not Hispanic 19.2 % African American	E.L. population percentage by language 88% Spanish 6.1% Vietnamese percentage of enrollment 13.7% Spanish .9% Vietnamese	59.7%	16.9%	yes
	Emmerton Elementary 1888 Arden Ave. San Bernardino, CA 92404	92404	868	48.7% Hispanic/Latino 32.5% African American 12.6% White, not Hispanic	E.L. population percentage by language 90.1% Spanish 5.2% Vietnamese percentage of enrollment 22.0% Spanish 1.3% Vietnamese	97.7%	33.5%	yes

	San Andreas Continuation 3232 E. Pacific St. Highland, CA 92346	92346	350	44.0% Hispanic/Latino 28.0% White, not Hispanic 26.0% African American	E.L. population percentage by language 97.9% Spanish 2.1% Vietnamese percentage of enrollment 13.4% Spanish .3% Vietnamese	68.6%	10.6%	yes

District Information	**Schools Information**	**HTR Zip Code**	**Total School Enrollment** **Potential Program Outreach**	**Enrollment by Ethnicity** **Top 3**	**Language Preference reflected by :** **Percentage of English Learners & School Support**	**Percentage of enrolled** **Free & Reduced Price Meals**	**Percentage of enrolled** **CalWORKS** **Formerly AFDC**	**Title One**
Hesperia USD **9144 Third St.** **Hesperia, CA 92345**	Mesquite Trails Elementary 13884 Mesquite Hesperia, CA 92345	HRT 92345 Rural	698	66.6% White, not Hispanic 24.2% Hispanic/Latino 2.9% African American	E.L. population percentage by language 91.3% Spanish 4.3 % Arabic 4.3% Filipino percentage of enrollment 3.1% Spanish	27.1%	3.6%	no.

	Ranchero Middle 17607 Ranchero Road Hesperia, CA 92345	HRT 92345	1,304	62.7% White, not Hispanic 28.0 % Hispanic/Latino 6.5% African American	E.L. population percentage by language 92.5% Spanish percentage of enrollment 7.5% Spanish	44.2%	12.5%	no
	Sultana High 17311 Sultana Ave. Hesperia, CA 92345	HRT 92345	2,347	63.7% White, not Hispanic 26.5% Hispanic/Latino 6.3% African American	E.L. population percentage by language 90.0% Spanish percentage of enrollment 6.8% Spanish	28.2%	9.5%	no
	Carmel Elementary 9321 Glendale Hesperia, CA 92345	92345	688	56.4% White, not Hispanic 33.3% Hispanic/Latino 7.1% African American	E.L. population percentage by language 98.5% Spanish percentage of enrollment 97.1% Spanish	65.0%	11.8%	yes
	Eucalyptus Elementary 11224 Tenth Ave. Hesperia, CA 92345	92345	705	35.9% White, not Hispanic 49.6% Hispanic/Latino 7.0% African American	E.L. population percentage by language 95.4% Spanish percentage of enrollment 20.7% Spanish	79.7%	15.7%	yes

Hesperia USD **9144 Third St.** **Hesperia, CA 92345**	Hesperia High 9898 Maple Ave. Hesperia, CA 92345	92345	2,041	49.7% White, not Hispanic 40.6% Hispanic/Latino 5.4% African American	E.L. population percentage by language 95.2% Spanish percentage of enrollment 12.7% Spanish	43.2%	4.5%	no
	Hesperia Middle 10275 Cypress Hesperia, CA 92345	92345	1,327	49.7% White, not Hispanic 42.0% Hispanic/Latino 4.8% African American	E.L. population percentage by language 94.6% Spanish percentage of enrollment 14.4% Spanish	56.9%	8.8%	no
	Hollyvale Elementary 11645 Hollyvale Ave. Victorville, CA 92392	92392	465	47.1% Hispanic/Latino 38.7% White, not Hispanic 7.1% African American	E.L. population percentage by language 94.3% Spanish percentage of enrollment 14.2 % Spanish	73.8%	9.8%	yes
	Joshua Circle Elementary 10140 Eight St. Hesperia, CA 92345	92345	806	61.9% Hispanic/Latino 30.1% White, not Hispanic 5.8% African American	E.L. population percentage by language 96.5% Spanish percentage of enrollment 27.3% Spanish	84.7%	14.2%	yes

	Juniper Elementary 9400 I Ave. Hesperia, CA 92345	92345	679	48.3% White, not Hispanic 40.4% Hispanic/Latino 5.9% African American	E.L. population percentage by language 97.9% Spanish percentage of enrollment 13.7% Spanish	60.7%	18.3%	yes
	Lime Street Elementary 16852 Lime St. Hesperia, CA 92345	92345	887	46.3% White, not Hispanic 33.9% Hispanic/Latino 9.8% African American	E.L. population percentage by language 94.7% Spanish percentage of enrollment 10.1% Spanish	74.0%	14.9%	yes
	Maple Elementary 10616 Maple St. Hesperia, CA 92345	92345	645	42.8% White, not Hispanic 43.9% Hispanic/Latino 6.5% African American	E.L. population percentage by language 97.5% Spanish percentage of enrollment 18.4% Spanish	65.4%	8.0%	yes

Disclosure of Data Source:

Demographic Data information obtained from The Educational Demographics Office that collects, analyzes and disseminates demographic data about California's public schools and school districts. The office supports the California Basic Educational Data System, the Language Census, and the California School Information Services (CSIS) initiative http://www.cde.ca.gov/demographics/

Educational Demographics Office
P.O. Box 944272
Sacramento, California 94244-2720

Telephone Number (916) 327-0219

PG&E TERRITORY PROGRAM—SCHOOLS & DISTRICTS RECRUITED

Please see Attachment 1 for a detailed summary of recruiting efforts during the month of August 2002. The following is a summary of further recruiting efforts. Where possible, the reason for the decision not to participate in the program is included.

Districts Recruited	District Participation	Schools Recruited	School Participation
Bellevue Union	Yes	Bellevue Elementary	Yes
		Kawana Elementary	Yes
		Meadow View Elementary	No
Bennett Valley	Yes	Yulupa Elementary	Yes
Jefferson Unified	Yes	MP Brown Elementary	Yes
		Majorie Tobias Elementary	Yes
		Thomas Edison Elementary	Yes
		JFK Elementary	Yes
West Sonoma County Unified	Yes	El Molino High School	Yes
		Analy High School	Yes
		Laguna Continuation High	Yes
Petaluma City Elementary	Yes	Valley Vista Elementary	Yes
		Mary Collins Elementary at Cherry Valley	Yes

		McDowell Elementary	No
		McKinley Elementary	No
Petaluma Joint Union High		Casa Grande High School	Yes
		Petaluma Junior High	Yes
San Mateo Union High School District	Yes	Hillsdale High School	Yes
Tamalpais Union	Yes	Tamalpais High School	Yes
Vallejo City School District	Yes	Federal Terrace Elementary	Yes
		Pennycook Elementary	Yes
		Jesse Bethel High School	No; custodian felt he had too many other things to deal with that year
		Mare Island High School	No; travel to training site was "too far" plus high cost and low quality of substitute teachers was an issue
Santa Rosa City Schools	Yes	Montgomery High School	Yes
Novato Unified	No	Hill Middle School	No; principal could not get teachers interested; may try again next year
		Olive ES	No; not interested
Old Adobe	No; interested, but for next year		
Waugh School District	No; already energy efficient		
Tracy Unified School	No; already implementing an energy program (facility retrofits and classroom		

District	education) through a contract with Honeywell)
Hayward Unified School District	Initially interested; then communicated that there were many things going on currently in the district and that it was not feasible to initiate the program with the time available to our site administrators

Recruitment efforts & challenges in January 2003:

Recruitment efforts are currently focused on the following districts: Alum Rock, Bellevue, Cotati-Rohnert Park, Fremont, Mt. Diablo, Newark, Novato, Piedmont, Pleasanton, San Leandro, Santa Rosa, San Mateo and West Sonoma County Union High School District.

Enrollment of districts and schools sites continues to be very difficult in the Bay Area. Trying to find ways to meet the mandated budget cuts has taken over the full attention of District Managers. One Superintendent commented that he didn't want the teachers taking on the program when they are being forced to take on much more because of budget cuts. Teachers are still expressing that they have too much on their plates as it is and that they do not have enough time to plan for program inclusion. Some teachers have expressed interest, but need more time to plan.

Recruitment efforts & challenges in February 2003:

We have been doing extensive program outreach to the following seventeen (17) School Districts: Albany, Cotati-Rohnert Park, Dixon, Emery, Los Gatos-Saratoga, Mt. Diablo, Novato, Petaluma, Piedmont, Portola Valley, San Leandro, San Rafael, San Ramon Valley, Santa Rosa City, Tamalpais, Travis, and Vallejo.

The biggest challenge we faced this month was getting a response from the districts and schools we contacted. The Administration was focused on planning ways to meet the enormous budget cuts that have been mandated. Some Districts told us they couldn't commit teachers because they are not sure which teachers will be around next year. The budget is their primary focus right now.

Recruitment challenges in March 2003:

Schools are currently issuing thousands of pink slips to teachers across the region and many of the teachers we've been working with (for instance, all 3 teachers at Pennycook ES) and those we're trying to work with have received pink slips. Enrolled teachers are afraid they will not be able to continue the program, because they will no longer be teaching at the same school in the fall. Those who have been thinking of enrolling in the program are now expressing to us that it does not make sense for them to commit their time to be trained (or for us to train them), because they will likely no longer be teaching at their current school in the Fall of 2003.

SCE TERRITORY PROGRAM—SCHOOLS & DISTRICTS RECRUITED

Districts Recruited	District Participation	Schools Recruited	School participation
Hesperia Unified School District	Yes	Carmel Elementary School	Yes
		Eucalyptus Elementary School	Yes
		Hesperia Middle School	Yes
		Hesperia High School	Yes
		Hollyvale Elementary School	Yes
		Joshua Circle Elementary School	Yes
		Juniper Elementary School	Yes
		Lime Street School	Yes
		Maple Elementary School	Yes
		Mesquite Trails Elementary School	Yes
		Ranchero Middle	Yes
		Sultana High School	Yes
Redlands Unified School District	Yes	Redlands High School	Yes
Rialto Unified School District	Yes	Boyd Elementary School	Yes
		Curtis Elementary	Yes
		Dollahan Elementary School	Yes
		Frisbie Middle School	Yes
		Hughbanks Elementary School	Yes
		Jehue Middle School	Yes
		Kolb Middle School	Yes
		Morris Elementary School	Yes
		Rialto High School	Yes
		Trapp Elementary School	Yes

Districts Recruited	District Participation	Schools Recruited	School participation
San Bernardino City Schools	Yes	Belvedere Elementary	Yes
		Emmerton Elementary School	Yes
		San Andreas Continuation School	No—dropped out; principal retired and new principal not interested in program
		San Gorgonio High School	Yes
		Serrano Middle School	Yes
Yucaipa-Calimesa Joint Unified School District	Yes	Calimesa Elementary School	Yes
		Canyon Middle School	Yes
		Parkview Middle School	Yes
Fontana City	Yes	Ambassador Christian Elementary, Middle, High	Yes
		Fontana Community Day School	Yes
Apple Valley Unified School District	No; unable to participate in program at that time.		
Silver Valley Unified School District	No; unable to participate in program at that time.	Silver Valley High Schools	No; unable to participate in program at that time.

PROFESSIONAL DEVELOPMENT WORKSHOP EVALUATIONS

October 2002

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The workshop met my needs: **Comments:**				3 out of 7	4 out of 7 - "I did not know what to expect, I feel supported in making our site Energy Efficient!" "I'm interested to see how this program goes…!"
The workshop was well presented: **Comments:**				1/7	6 / 7
The handouts and resource materials were useful:				3/ 7 – "Would have to use them first ☺!"	4 / 7 – "Thanks"
I feel comfortable implementing the Green Schools Program **Comments:**				5 / 7	2 / 7 – "So far, so good!" "Wow – great ideas – your comments make it seem so easy to implement the program."
The pacing and length of the workshop was just right: Comments:			1/7 – "It was long, but worthwhile."	4 / 7 – "I liked how it wasn't rushed. Time allowed for lots of questions, answers, concerns."	2/ 7

What worked for you? "Planning." "Terrific overview / introduction to program." "1. New ways of looking at energy. 2. Meeting new faces." "The presenters were energetic and interested." "How many resources and support is available. Thank you ☺ Great Food!" "Working with my colleagues on a year long plan was well worth it – and all the information really got me thinking and motivated about our 'energy crew'."

What could we improve on? "A room with windows ☺."

What suggestions do you have for future workshops? "Um… please continue the effort." "What are other schools finding success with…?" "Encourage more schools that weren't here to come for more district collaboration."

Green Schools 175 North Redwood Drive

1. Please identify yourself by checking the appropriate box:

Teacher __4__ Custodian____2__ Administrator___1__ Other (specify) _____

2. Please tell us about the workshop process:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) I have a clear understanding of the Green Schools Program and my role as a member of my school's Green Team.				**2/7**	**5/7**
b) The timing and location of this workshop was to my liking.			**2/7**	**3/7**	**2/7**
c) The pace and length of the workshop was appropriate.				**3/7**	**4/7**
d) The materials were well presented.				**2/7**	**5/7**
e) I had adequate time to formulate my 5-Strand Plan.				**4/7**	**3/7**

Comments:

"Awesome! I am motivated. I do feel overwhelmed, but I am anxious to try it out."
"Thanks"

"Discussions were very helpful."

"This was more enjoyable and informative then expected."

3. Please tell us about integrating Green Schools with your regular work:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) I understand how Green Schools can fit with my regular work.			**2/7**	**1/7**	**4/7**
b) I have or have access to the tools I need to be successful at integrating Green Schools with my regular work.				**3/7**	**4/7**
d) I am excited to integrate Green Schools with my regular work.				**1/7**	**6/7**

Comments:

"Having Mildred accessible to us is essential to our success."

"This workshop had practical lesson ideas that will go perfectly with my curriculum."

"I worry about fitting it in with the regular curriculum."

4. What was the most useful part of this training?

"The hands on experiments."

"Most parts were useful."

"Learning lessons, learning about savings & practical applications."

"Just about everything."

"Everything!"

"The education transferred into $. That's easy to see and easier to relate to."

5. What was the least useful part of this training? Why?

"Academic part of the seminar, because it doesn't apply on my everyday job."

"The skits. These will be hard to do exactly as in the workshop. Skits are a great idea in general, however."

"None"

"0"

6. Is there anything else you would have liked for us to cover in this workshop?

"Bill reading"

"5-Strand plan was useful, but I was a bit confused about timing."

"More detail on audit & reading gas & electric meters"

"Can't think of anything."

"No"

7. Any additional comments?

"I am looking forward to our school team efforts to conserve energy and save the school district money and winning an earth Apple Award."

"Do the seminar more often and more school participants."

"Thanks! I'd like a catalog of fundraising items."

"Thanks. Saving energy is not just about money."

1. Please identify yourself by checking the appropriate box (Name is optional):

Teacher ____10____ Custodian_____1____ Administrator_____ Other (specify) __2 (Garden Coordinator & Env. Ed Coordinator)____

2. Please provide feedback on today's meeting:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The meeting met my needs: **Comments:** "Thank you for responding to feedback and giving time to brainstorm / plan – Great Day!"	0	0	0	7	2
I have a strong understanding of what the Green Schools program is about. Comments:				6	7
As a participant of Green Schools, I understand what is expected of me. Comments:				8	5
The meeting was well presented. **Comments:**			1	11	1

The pacing and length of the meeting was just right: **Comments:** "Day 1, it seems, could have been condensed, so there could have been more actual planning time." "More activities in day 1 would be nice." "Participants need more time to interact with one another. Too much one-way lecture style presentation!☺" "Too much talking to; need more planning time." "Consider adding two more up-out of seats activities; pick up pace a bit!" "Much better day 2"				9	4
The meeting was scheduled at a good time and location. Comments: "Fine." "1st week of summer is better than during school!"			1	8	4

3. What worked for you?

11 people commented: "Presenters were very supportive. Binder & materials look great. Have to sit down with binder & look closely at lessons and ideas to form a plan." "Establishing a student committee with t-shirts in my class. The children loved presenting their posters & data to their peers." "Sharing of ideas." "Staff involved seems very open, generous, and supportive! Great sharing of resources!" "Clear presentation of Green Schools goals & expectations." "10-3 time is very convenient. Planning time with team was invaluable. Guest speakers providing first hand experiences were great." "Time spent brainstorming/answering questions with people from other schools." "Developing monthly plan with team. Having custodian and principal here!" "Using binder." "Sample plans, introduction to program, sampling of kits, selection/binder of activities." "Presentation on other programs – learned a lot. Planning time. Experiencing the different lessons."

4. What could we improve on?

10 people commented: "Could be more active on first day – second day was great. Overwhelmed with resources on first day." "Information on how to get the whole school involved." "Help with planning." "More planning time – not just the overall school plan, but specific activity planning." "Are there activities to help familiarize us with the binder?" "Duplication of lessons and materials presented at first training is not the best way to enhance teacher understanding…" "Day 1 needed more movement / less talk!" "More planning time." "More simple projects." "Planning 4 months of school-wide activities was difficult without teammates from my school. To get started, a monthly meeting of teachers with Mildred to plan month's activities rather than trying to plan 4 months in June."

5. What suggestions do you have for future meetings?

5 people commented: "Continue hearing from schools involved in program – what works? Share ideas." "Create hands-on projects to do with kids." "Would love to have kids env. ed. conference of participating schools." "Divide elementary and high school participants to provide a more focused program to each participant." "Panel of speakers on different approaches to integrating energy program."

Please provide feedback on your project implementation:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I will have an easy time implementing the program in my classroom/school. Comments: "Turning off lights & computers will work, coordinating team of students may be challenging." "This is a loaded term!"		1	3 "School"	10 "Classroom"	
The support / resources provided by program staff will be helpful. Comments: "Access to Mildred & tool kit is very helpful."				7	6
The program will positively impact our school. Comments: "This prog. meshes perfectly with our school's philosophies." "If adopted by other teachers."				5	8

To what extent will you use the following tools/resources?

	Not at All 1	2	3	All the time 4
Instructional Resources Binder: "Hard to correlate to grade level. Difficult to read upside-down back to back."		2	2	3
Poster(s)		2	8	1
Mildred Dandridge		1	8	3
Tool Kit: "As much as possible." "When available."		3	6	2
Guest Speakers : "If / when available."	1	9	0	2
Other teachers		4	6	1
Personal resources		1	7	3

Green Schools Training

October 10th & 11th, 2002

Ontario Hilton Airport

Cumulative EVALUATION

1. Please identify yourself by checking the appropriate boxes. Check all that apply.

Teacher	*Administrator*	*Custodian*	*Student*
29	*1*		

2. Please tell us about integrating Green Schools with your regular work:

		Not really 1	2	3	4	Completely 5
2.a	I have a clear understanding of how to fit GS with my regular work				**4.2**	
2b.	I have the tools I need to be successful at integrating GS with my regular work			**3.7**		
2c.	It was easy to understand how to integrate GS and my regular work				**4.03**	

Comments:

- Looks like fun, like the program
- Need more primary materials
- Workshop was worth coming to, good information
- Nicely organized and engaging, some repetitive

3. What more can we do to help you integrate Green Schools and your daily responsibilities?

- Tool Kit, Guest Speakers, SAC teams, Green Schools reps, Community partners, materials

4. Please tell us about the planning process.

4a. Did you have adequate time to formulate your 4-Strand Plan? Yes **25** No **3**

4b. Did you have adequate preparation to formulate your 4-Strand Plan? Yes **27** No **1**

4c. What was missing from the planning process? (comments):

- Information on the tool kit
- Enough time

5. What was the most useful part of the training?

- Instructional resources, lesson plans
- Earth Apple Awards, video examples of success

6. What was the least useful part of the training?

- All was good
- N/A
- Break-out groups

7. To what extent will you use the following tools?

	Not at All 1	2	3	All the Time 4
Instructional Resources Binder			**3.2**	
Poster			**3.6**	
Student Advisory Councils			**3.1**	
Building Operator Training Program			**3.7**	
Expert Resource			**3.1**	
Tool Kit			**3.3**	
STEM Training (HS only)			**3.2**	
Earth Apple Awards			**3.2**	

8. Are there other things that you need to start your project or that you would like to see addressed in the training?

Yes **2** No **28**

If yes, what?

The materials we asked for.

9. Any final comments?

- Wonderful program
- Excellent job
- Good to include custodians

1. Please identify yourself by checking the appropriate box:

Teacher **25** Custodian **5** Administrator_____ Student _____ Other (specify) _____

2. Please tell us about the workshop process:

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) I have a clear understanding of the Green Schools Program and my role as a member of my school's Green Team.	**1**		**1**	**13**	**15**
b) The pace and length of the workshop was appropriate.	**1**	**1**	**2**	**13**	**13**
c) The materials were well presented.	**1**	**1**	**1**	**12**	**15**
d) I had adequate time to formulate my 5-Strand Plan.	**1**	**3**	**2**	**11**	**13**

Comments:

- The presentation was great.
- More time in certain areas.
- Hard to get all organized in an hour.

  - **What was the most useful part of this workshop?**
    - The speakers were great, very informative. Energy overview, data on common energy use
    - Hands-on projects, using the tools, group hands-on work
    - Teacher involvement, time with the team to plan, leaving with a plan

  - **What was the least useful part of this workshop? Why?**

- Sharing everyone's program –same over and over
- Too much in one day

- All the specific electrical information

  - **Is there anything else that you would have liked for us to cover in this workshop?**

- Have information provided on a CD-Rom
- How to read meters
- List of energy-savings tips, useful websites
- Other environmental information

3. Please tell us about integrating Green Schools with your regular work:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) I understand how Green Schools can fit with my regular work.	**1**		**6**	**9**	**8**
b) I have or will have access to the tools I need to be successful at integrating Green Schools with my regular work.	**1**	**2**	**4**	**10**	**7**

Comments:

- **Is there any additional assistance that you will need to start Green Schools at your site? If you need something specific, please include your contact information as well.**

  - Thanks for working so hard to make it look so easy
  - Due to standards we cannot include it in regular instruction so we made an alternative plan
  - Tool kit for each site to allow for spontaneous teaching opportunities

PG&E Territory Project—Strand Plan Summary

# of strand plans as of 2/18/04: 38

# of pending strand plans as of 2/18/04: 3

District County Statement of Intent	School Zip Code HTR	Schools	Strand Plan	Plan Completed
Vallejo City Solano County Signed SOI ✓	94590 HTR	Pennycook Elementary	Fall 2002 Spring 2003 Spring 2004	10/22/02 2/24/03 1/21/04
	94590 HTR	Federal Terrace Elementary	Spring 2003 Fall 2003 Spring 2004	3/22/03 6/17/03 1/21/04
San Mateo Union High San Mateo County Signed SOI ✓	94403 HTR	Hillsdale High School	Fall 2002 Spring 2003 Spring 2004	10/22/02 2/24/03 Pending*
Petaluma City Elementary SD Sonoma County Signed SOI ✓	94952	Valley Vista Elementary	Spring 2003 Spring 2004	3/22/03 1/21/04
	94952	Mary Collins Elementary	Fall 2003 Spring 2004	6/19/03 1/21/04
Petaluma Joint Union High Sonoma County Signed SOI ✓	94952	Petaluma Junior High	Spring 2003 Spring 2004	3/22/03 1/21/04
	94954 HTR	Casa Grande High School	Fall 2003 Spring 2004	6/17/03 Pending*
Tamalpais Union Marin County Signed SOI ✓	94941	Tamalpais High School	Fall 2003 Spring 2004	6/18/03 1/21/04
Jefferson Unified San Mateo County Signed SOI ✓	94015 HTR asserted	MP Brown Elementary	Fall 2003 Spring 2004	6/18/03 1/21/04
	94015 HTR asserted	Marjorie Tobias Elementary	Fall 2003 Spring 2004	8/20/03 1/21/04

District County Statement of Intent	School Zip Code HTR	Schools	Strand Plan	Plan Completed
	94015 HTR asserted	Thomas Edison Elementary	Fall 2003 Spring 2004	8/20/03 1/21/04
	94014 HTR asserted	John F Kennedy Elementary	Fall 2003 Spring 2004	6/18/03 1/21/04
West Sonoma County Unified Sonoma County Signed SOI ✓	95472	Analy High School	Fall 2003 Spring 2004	9/20/03 1/21/04
	95436	El Molino High School	Fall 2003 Spring 2004	9/20/03 1/21/04
	95472	Laguna High School	Fall 2003 Spring 2004	9/20/03 1/21/04
Santa Rosa City Schools Sonoma County Signed SOI ✓	95405	Montgomery High School	Fall 2003 Spring 2004	9/20/03 Pending*
Bennett Valley Sonoma County Signed SOI ✓	95405	Yulupa Elementary	Fall 2003 Spring 2004	8/20/03 1/21/04
Bellevue Union Sonoma County Signed SOI ✓	95407 HTR asserted	Bellevue Elementary	Fall 2003 Spring 2004	6/18/03 1/21/04
	95404 HTR asserted	Kawana Elementary	Fall 2003 Spring 2004	6/18/03 1/21/04

* These schools did not attend the mid-year meeting. We will work with them to create a strand plan for spring of 2004.

SCE Territory Project—Strand Plan Summary

# of strand plans as of 12/31/03: 43*

# of pending plans as of 12/31/03: 2

District	School Zip Code	Schools	Strand Plan Semester	Date Plan Completed
Rialto USD ✓ Signed SOI	HTR 92376	Boyd Elementary	Fall 2002 Spring 2003	Pending** 2/25/03
	HTR 92376	Dollahan Elementary	Fall 2002 Spring 2003	10/11/02 2/25/03
	92377	Hughbanks Elementary	Fall 2002 Spring 2003	10/11/02 2/25/03
	92377	Trapp Elementary	Fall 2002 Spring 2003	10/11/02 Pending**
	92377	Kolb Middle	Fall 2002 Spring 2003	10/11/02 2/25/03
	HTR 92376	Curtis Elementary	Spring 2003	03/5/03
	HTR 92376	Frisbie Middle	Spring 2003	03/5/03
	HTR 92324	Morris Elementary	Fall 2003	10/8/03
	HTR 92324	Jehue Middle	Fall 2003	10/8/03
	HTR 92376	Rialto High	Fall 2003	10/8/03
Redlands USD ✓ Signed SOI	92374	Redlands High	Fall 2002 Spring 2003	10/11/02 2/19/03
San Bernardino City USD ✓ Signed SOI	HTR 92346	Serrano Middle	Fall 2002 Spring 2003	10/11/02 2/19/03
	HTR 92346	Belevedere Elementary	Spring 2003	03/5/03
	HTR 92404	San Gorgonio High	Fall 2002 Spring 2003	10/11/02 2/19/03
	HTR 92404	Emmerton Elementary	Spring 2003	3/5/03
	HTR 92346	San Andreas Continuation High School	Spring 2003	3/5/03

District	School Zip Code	Schools	Strand Plan Semester	Date Plan Completed
San Bernardino County Office of Education	HTR 92355	Fontana Community Day School	Fall 2003	10/8/03
Southern CA Private School District ✓ Signed SOI	HTR 92335	Ambassador School Elementary/Middle/High	Fall 2002 Spring 2003	10/11/02 2/25/03
Hesperia USD ✓ Signed SOI	HTR 92345	Mesquite Trails Elementary	Fall 2002 Spring 2003	8/23/02 2/27/03
	HTR 92345	Ranchero Middle	Fall 2002 Spring 2003	8/23/02 2/27/03
	HTR 92345	Sultana High	Fall 2002 Spring 2003	8/23/02 2/27/03
	92345 HTR	Carmel Elementary	Fall 2003	10/8/03
	92345 HTR	Eucalyptus Elementary	Fall 2003	10/8/03
	92345 HTR	Hesperia High	Fall 2003	10/8/03
	92345 HTR	Hesperia Middle	Fall 2003	10/8/03
	92392	Hollyvale Elementary	Fall 2003	10/8/03
	92345 HTR	Joshua Circle Elementary	Fall 2003	10/8/03
	92345 HTR	Juniper Elementary	Fall 2003	10/8/03
	92345 HTR	Lime Street Elementary	Fall 2003	10/8/03
	92345 HTR	Maple Elementary	Fall 2003	10/8/03
Yucaipa-Calimesa Joint USD	92399	Calimesa Elementary	Fall 2003	11/24/03

District	School Zip Code	Schools	Strand Plan Semester	Date Plan Completed
	92399	Canyon Middle	Fall 2003	11/24/03
	92399	Parkview Middle	Fall 2003	11/24/03

* This number does not include the strand plans that were created at the February 2004 mid-year meetings. We are currently compiling this information and will get it to you as soon as we can.

**We are still trying to locate the strand plans for these schools.

PG&E TERRITORY PROGRAM—PARTICIPATING ADMINISTRATORS

- Principal at MP Brown Elementary (Jefferson School District)
- Principal at Marjorie Tobias Elementary (Jefferson School District)
- Principal at Valley Vista Elementary (Petaluma City Elementary School District
- Principal at Mary Collins Elementary at Cherry Valley (Petaluma City Elementary School District)

SCE TERRITORY PROGRAM—PARTICIPATING ADMINISTRATORS

- San Bernardino County Superintendent of Schools
- Assistant Superintendent Hesperia Unified School District
- Assistant Superintendent Rialto Unified School District
- Superintendent Rialto Unified School District
- Principal Fontana Community Day School
- Principal Eisenhower High School, Rialto Unified School District
- Representative, Eisenhower High School, Rialto Unified School District
- Past President Rialto Unified School District
- Representative, Virtual Hi-Tech High Program