

Proposal for Green Building Technical Support Services

Submitted to the California Public Utilities Commission

In response to R.01-08-028 2002 Energy Efficiency Program Selection

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Program Overview

Frontier Associates is pleased to submit this proposal to the California Public Utilities Commission for provision of Green Building Technical Support Services. Together with our teaming partner, Austin Energy, we will provide comprehensive consulting services to local governments to initiate or expand their green building or sustainable construction programs.

Green Building programs promote energy- and resource-efficient building design and construction. They incorporate all of the known energy efficiency technologies and practices, but go beyond the narrow consideration of energy at its end use. Green building takes a holistic view of building design and construction by also considering other major energy issues, such as the energy used to deliver clean water; the energy and resources used in the production, transport, use, and disposal of building materials; and the relationships between the building's energy systems and indoor air quality.

Our residential consulting will seek to expand the construction of "green" homes by helping local governments develop educational programs targeting building professionals and homeowners. Our commercial consulting will assist governments in incorporating green design and construction in their own institutional projects, which has value for its intrinsic efficiencies and provides a positive example to stimulate similar practices among the private building industry. For those jurisdictions that are ready to develop a more aggressive green building program that incorporates private-sector commercial projects, we will help them develop educational and incentive programs that accomplish their objectives.

Together, Frontier Associates and Austin Energy form an unparalleled team of professionals with the longest history of field experience in developing green building programs and in implementing them on a mass audience, public level. We have extensive expertise in this field, building on ten years of experience in the development and promotion of green building guidelines on a local level.

All of our team members have a strong experience in green building and the realities of developing, writing, marketing, and implementing guidelines and programs. We strongly emphasize regional appropriateness and developing programs that are designed specifically for the local conditions. We all have many years of field experience and know what building professionals and consumers will and will not accept. Our staff also has equal experience in new construction and remodeling.

The team consists of experienced professionals who have worked the majority of their career in the private sector. The team is composed of staff reflecting the full spectrum of building industry functions, with architects, builders, engineers, marketers, businesspeople, educators, and project managers. Our experience covers residential (low income, speculative, and custom), multi-family, commercial, high-tech, and institutional. Some members of our team have spent many years working in construction and green building in California.

Program Proposal Summary

| | |
|-------------------------------|---|
| Program Name | Green Building Technical Support Services |
| Program Category | Local Cross-Cutting Program – Education/ Training/ Outreach |
| Budget | \$593,666 from PG&E electric PGC funds |
| Performance Targets | Provide technical support services to five local governments |
| Program Strategies | Upstream information program |
| Target Market Segments | Residential New Construction Nonresidential New Construction |

Program Rationale

Our proposal targets new construction since, as a general rule, incorporating energy and resource efficiency into the design and construction of a new building is more effective than retrofitting a building after construction. The green building community is increasingly embracing three guiding principles to new construction program design:

1. An integrated whole-building systems approach to design and construction will always produce substantially better results than a more narrowly focused measure approach. When building team members come together at the very start of the project to coordinate functions, set specific project goals, and then work in a coordinated fashion towards achieving those goals, the project will be designed better, reduce change orders, save construction costs, and result in a higher quality building.
2. A holistic approach that considers *all* energy impacts related to design and construction (energy, water, indoor environmental quality, and materials) will produce greater benefits to the building owner and the greater community than efforts to address energy use in the typical narrow scope.
3. To encourage innovation, voluntary, rewards-based initiatives are required. Punitive approaches (e.g., building codes and equipment standards) are necessary at times to set a minimum and cement the role of widely adopted design and construction methods as standard practice. However, they are of little use in promoting the development and adoption of innovative practices.

This program will help local jurisdictions establish guidelines that facilitate strong building professional and homeowner participation.

Market Barriers

Local governments (cities and counties) are logical agents for promoting innovative design and construction practices that improve building resource efficiency and construction quality. They already work closely with construction project developers to ensure that the resulting building will satisfy societal criteria for health and safety and will be consistent with community values for building design and land use, as expressed in the agency's General Plan, Building Code, and other planning policies. However,

local governments face significant constraints in funding, staffing, expertise, and other resources needed to aggressively promote best practices within the local construction community.

Program Response

This program will provide the necessary technical resources for interested local governments to expand their existing green building initiatives or implement new initiatives. The program will help governments:

- Develop educational resources to train building designers and construction contractors on state-of-the-art green building practices
- Develop rewards-based mechanisms to encourage the building and design community to adopt these practices
- Develop design guidelines and other resources to govern eligibility for these rewards
- Implement the guidelines
- Develop mechanisms to enroll builders and developers into the programs and to educate homeowners about the benefits of purchasing green homes

The program will incorporate elements that promote the conservation of energy, water, and construction materials in ways that are consistent with public health and safety and other considerations. The program will address both residential and nonresidential new construction.

Objectives

The Green Building Technical Support Services objective is to transfer green building technical expertise and resources to participating local governments. We intend to work with interested Bay Area cities and counties to assist them in adopting and promoting more sustainable construction practices. Specific services will be tailored to the needs of each jurisdiction but will be geared towards developing programs or projects which are consistent or compatible with the efforts of the other Bay Area jurisdictions.

The objective of this program is *not* to provide ongoing, subsidized green building program delivery services on behalf of participating agencies. Thus, one challenge will be to assist governments in developing in-house programs that can be implemented within the constraints of available agency staffing and financial resources.

Program Process

Marketing and Outreach Plans

The program will direct its outreach efforts to nine Bay Area counties and 100 Bay Area cities and towns. We have already made preliminary contact with appropriate staff from a majority of the counties and many of the larger cities and have found strong support for such a program. A few agencies have contributed letters of support, which are attached in Appendix A.

Once the Green Building Technical Support Services program receives funding, we will continue outreach efforts, focusing first on county governments. We will solicit both direct county involvement in the program and references to cities within the county that are good candidates to benefit from program services. We will also directly approach those cities experiencing high rates of construction activity, since they would particularly benefit from developing or enhancing a green building program.

Finally, we will solicit active involvement from the Association of Bay Area Governments (ABAG). ABAG is a regional planning agency established to address regional issues in areas such as land use, housing, environmental quality, and economic development. ABAG is owned and operated by the cities and counties of the San Francisco Bay Area. As such, it represents an ideal forum, not only for initial outreach and marketing efforts to specific agencies, but also for more general communication and education initiatives to the full ABAG membership. Through ABAG, we hope to coordinate with several ongoing regional initiatives, including the Bay Area Alliance for Sustainable Development and the Green Business Program.

The Bay Area Alliance for Sustainable Development is a multi-stakeholder coalition established in 1997 to develop and implement an action plan that will lead to a more sustainable region. The Alliance provides a forum to address the region's inter-related needs for a prosperous economy, quality environment, and social equity. The members of the Bay Area Alliance are constituency-based public and private sector organizations, as well as the civic, philanthropic and faith communities. William Carroll, ABAG President, serves on the five-member Alliance steering committee. Together, the member agencies have adopted Ten Commitments to Action, which includes the commitment to use resources efficiently, eliminate pollution, and significantly reduce waste. Green Building Technical Support Services will contribute directly to this goal.

ABAG coordinates the Green Business Program, which is a successful voluntary partnership of government agencies, professional associations, utilities, businesses and a concerned public. Participants work together to assist, recognize, and patronize businesses that operate in an environmentally responsible way. The Program helps businesses comply with environmental regulations, and then go beyond compliance to conserve energy, water and other resources, and to reduce pollution and waste. The program currently operates in Alameda, Contra Costa, Napa, Santa Clara, and Sonoma

Counties. This program may prove to be a useful channel for acknowledging businesses that adopt green building practices in their capital improvement projects.

Enrollment Process

Participants in this program will be local governments in the Bay Area. Frontier and Austin Energy program staff will meet with government staff to explore the agency's needs for technical assistance and the program's ability to satisfy those needs. This meeting will lead to a mutually agreeable set of services the program will provide, which will be formalized through a letter agreement. These services will be tailored to complement the agency's existing and planned program activities, including any technical support the agency is receiving from other entities. Since the program focus is to transfer technical expertise and resources to the local government, a commitment of agency staff time is a prerequisite for receiving these services.

As part of participation in the program, we will ask local governments to participate in a program advisory committee. The committee will provide a forum for exchanging information and experiences, discussing common issues, identifying common needs, and allocating program resources to participating governments in an equitable manner.

Services to be Provided

As our program design starting point for residential buildings, we will use the Alameda County Waste Management Authority's (ACWMA) residential green building guidelines (see Appendix F and www.stopwaste.org/fsbuild.html). These guidelines were well developed by a collaborative effort of the ACWMA, local building professionals, and national green building experts to specifically suit Bay Area conditions. The guidelines are presently being implemented in Alameda County with great success. It is our intention to assist city and county governments in other Bay Area counties in adopting these same or similar guidelines in their local jurisdictions. Doing so will provide a degree of program uniformity across jurisdictions that facilitates support and participation from the construction industry. Our team has spoken with ACWMA staff and they have agreed that we can use their guidelines in other Bay Area Counties. ACWMA accepts no liability for the use of these guidelines in any jurisdiction outside of Alameda County.

Our program starting point for commercial buildings will be the U.S. Green Building Council's (USGBC) LEED™ commercial guidelines and rating system (see Appendix G or www.usgbc.org). LEED has been funded and strongly supported by the U. S. Department of Energy and the U. S. Environmental Protection Agency as the best developed criteria to evaluate green commercial buildings. In fact, numerous federal, state, and local governments feel that the benefits of building to the LEED criteria are so great that they require that all of their institutional buildings meet the criteria. Additionally, the California Energy Commission is presently completing a set of modified LEED criteria to suit the California market specifically. We will promote these criteria through this program. When appropriate, we will also supplement both

commercial and residential guidelines with Austin Energy Green Building Program elements, tailored to local conditions.

For budgeting purposes, we have assumed we will provide intensive and tailored technical support services to a total of five cities and/or counties. We will work with local government staff to identify and prioritize green building activities the agency would like to accomplish, for which outside technical support and resources are necessary. Interactions with several county program managers have already indicated at least one key area. In those counties that have active green building programs, Green Building Technical Support Services will help county staff transfer that expertise to city staff interested in pursuing analogous initiatives at the local level.

Possible program services and focus areas include:

- Program development
- Training seminars and workshops
- Demonstration projects
- Recommendations on improved marketing and educational strategies/tactics
- Development or refinement of sustainability guidelines, sourcebooks, manuals, specifications, rating systems and fact sheets
- Building commissioning guidelines
- Development of improved brochures, advertisements, publications, and web site
- Development of training materials and training of staff on technical issues and implementation strategies
- Project design and specifications review
- Energy analysis/modeling
- Program evaluation

In addition to tailored, agency-specific technical support services, we have reserved ten percent of the program budget for more general educational activities. These activities may serve private sector builders, developers, architects, and engineers, along with some or all local governments in the Bay Area. Anticipated educational channels include training seminars and workshops, meeting presentations, and electronic and print media channels.

Coordination with Other Programs

We will coordinate with existing green building programs the various cities and counties in the region have already begun to implement. Our services are not intended to supplant existing initiatives. Rather, this program will complement existing efforts to improve the quality of Bay Area design and construction practices. It is our intention to advise and assist Bay Area governments in improving existing efforts or, when appropriate, developing new efforts. Although our primary clients will be local

governments, we will, to the best of our ability, work with any and all parties who have the common goals of improving the sustainability of Bay Area building practices.

We will coordinate with existing new construction programs. We will assist local governments in providing technical assistance to those projects that wish to qualify for incentives through either the residential California ENERGY STAR® New Homes or the nonresidential Savings by Design programs. To the extent possible, we will also help them obtain incentives from water conservation and resource conservation programs.

Customer Eligibility

Targeted Customers

Targeted customers for this program include the nine counties in the San Francisco Bay Area and the 100 cities that are located in those counties. The residential target for our program will not include Alameda County jurisdictions, since ACWMA already offers a program to this market.

Customer Sizes Targeted

There is no limitation on the size of the city or county.

Geographic Area

The nine-county Bay Area includes Alameda, Contra Costa, Solano, Napa, Sonoma, Marin, San Francisco, San Mateo, and Santa Clara counties.

Program Performance Goals

The program will provide intensive and tailored technical support services to a minimum of five cities and/or counties. For each participating jurisdiction, we will prepare a letter agreement that includes a scope of work, budget, and jurisdiction-specific performance goals. These letter agreements will be presented to the administrating utility and/or PUC staff for review and approval prior to being finalized.

Evaluation Plans

We will hire a third-party evaluator for this program. Evaluator selection will be subject to approval by the utility administrator.

Evaluation Objectives

Program evaluation will address the following objectives:

- Provide up-front market assessments and baseline analysis
- Provide ongoing feedback, and corrective and constructive guidance regarding the implementation of programs
- Measure indicators of the effectiveness of specific programs, including testing of the assumptions that underlie the program theory and approach
- Help to assess whether there is a continuing need for the program.

Approach to Evaluating Program Success

Evaluation activities will focus on reviewing program documentation and interviewing participating local government staff and others with detailed knowledge of program activities. The focus of these activities will be to address the four evaluation objectives, as described below.

Market assessments and baseline analysis

A market assessment and baseline analysis will be conducted as part of the implementation plan. The market assessment will consist of a brief overview of the status of green building programs throughout the nation. The baseline analysis will catalog major green building initiatives in the Bay Area.

Ongoing program implementation feedback

Midway through program implementation, the program evaluator will conduct a series of interviews with participating local government staff and others with detailed knowledge of program activities. These interviews will elicit feedback on the strengths and weaknesses of program design and implementation, which will form the basis for a series of recommendations for improving program delivery.

Measure indicators of program effectiveness

Letter agreements with participating local governments will specify indicators of program effectiveness that reflect the specific services anticipated. Evaluation activities will be refined to measure these indicators at that time.

Assessment of continuing program need

The benchmark for determining the need for continuing the program will be the degree to which participating local governments are equipped with the in-house knowledge base and information resources to manage their green building programs. Measures of this benchmark will be incorporated in interviews with government staff.

Budget

Proposed Funding Category

This proposal is submitted as a Local Cross-Cutting Program: Education/ Training/ Outreach with a total budget of \$593,666, including five percent for contract administration, to come from PG&E electric PGC funds.

Budget Summary

Reporting costs include the cost of developing an implementation plan, six quarterly reports, and one final report.

Travel expenses assume a total of 17 trips from Austin to the Bay Area at \$1,000 each for air fare, lodging, car rental, and per diem. It also assumes local staff travel 150 miles per month at \$0.35 per mile.

Marketing and outreach costs incorporate staff time to make initial contact with local governments and time to develop and finalize five letter agreements with participating agencies. It also includes \$50,000 for general education activities.

Direct implementation costs reflect the assumptions that Frontier staff will spend 24 hours per month providing services, for a total of 504 staff hours. Austin Energy staff will spend 120 hours per month providing services, for a total of 2,520 staff hours.

Budget

| | First Year Cost | Second Year Cost | Total Cost |
|---|--------------------|---------------------|------------------|
| Administrative Costs | | | |
| Program Manager | \$6,480 | \$8,640 | \$15,120 |
| Administrative Support | \$2,520 | \$3,360 | \$5,880 |
| Travel expense by direct & indirect labor | \$7,758 | \$10,344 | \$18,103 |
| Reporting | \$6,600 | \$7,200 | \$13,800 |
| Miscellaneous | \$2,267 | \$3,023 | \$5,290 |
| Total Frontier Administrative Costs | \$25,625 | \$32,567 | \$58,193 |
| Marketing/Advertising/Outreach Costs | | | |
| Total Marketing/Advertising/Outreach Costs | \$31,200 | \$50,000 | \$81,200 |
| Direct Implementation Costs | | | |
| Frontier labor | \$21,600 | \$28,800 | \$50,400 |
| Austin Energy labor | \$108,000 | \$144,000 | \$252,000 |
| Other subcontractors | \$21,600 | \$28,800 | \$50,400 |
| Materials and supplies | \$4,286 | \$5,714 | \$10,000 |
| Miscellaneous | \$15,549 | \$20,731 | \$36,280 |
| Total Direct Implementation Costs | \$171,034 | \$228,046 | \$399,080 |
| Evaluation, Measurement and Verification Costs | | | |
| Total EM&V Costs | \$0 | \$26,924 | \$26,924 |
| Total Frontier/ Austin Energy Budget | \$227,860 | \$337,537 | \$565,396 |
| Contract Administration | \$11,393 | \$16,877 | \$28,270 |
| TOTAL BUDGET | \$239,253 | \$354,413 | \$593,666 |

Corporate Qualifications and Staffing

Primary Implementer

For this project, Frontier Associates will provide project coordination, contract administration, and program reporting. The firm brings to the project broad experience with all facets of energy efficiency program design, implementation, and evaluation.

Established in 1999, Frontier quickly became the leading energy efficiency consultant to investor-owned utilities in Texas. Now, throughout the country, Frontier is an important consultant to electricity retailers, electricity distribution companies, power generators, natural gas distributors, electricity and gas consumers and manufacturers of energy efficiency related products.

Frontier's growth and success is founded on our unparalleled knowledge of market and regulatory issues facing utility companies, business and industry, regulatory bodies, all levels of government, and consumers, as evidenced by our diverse client base and professional staff. Frontier Associates delivers its consulting expertise to clients in each sector of the energy industry:

- **Utilities:** Frontier Associates works with electric and gas utilities and the Public Utility Commission of Texas on a variety of topical areas including sales and marketing, program design and evaluation, and pricing. Our capabilities are well suited to either the regulated or competitive side of today's utility business.
- **Commercial and Industrial Customers:** Frontier Associates provides a broad range of energy use and procurement services to its C&I clients, ranging from load profiling to pricing options to developing bids into utility or state sponsored efficiency projects.
- **Allied Industries:** Manufacturers, distributors and retailers are affected by a number of utility and regulatory initiatives to promote higher efficiency products. Frontier Associates provides consulting services to allied industry clients on how to prosper through participation in these programs.

Subcontractors

For this project, Austin Energy will provide a large bulk of the green building technical consulting services. The firm brings to the project extensive experience with all facets of effective green building program design, implementation, and evaluation.

The mission of Austin Energy's Green Building Program over the past ten years has been to accelerate the integration of sustainable building products and practices with mainstream building through marketing, education, and technology transfer. We encourage construction professionals and consumers to incorporate sustainable building practices, systems, and materials into residential, multi-family, commercial,

municipal/institutional, and affordable housing, all within new and retrofit construction. Our success is due to the fact that we are promoting “win-win” propositions: improved building quality, reductions in utility bills, reduced maintenance costs, improved indoor air quality, and resource conservation. This positive, market-oriented approach brings interested buyers and informed building professionals together, stimulating voluntary improvements and maintaining a working relationship between the building industry, utility, and municipal government, while increasing the overall understanding of the public on the issues of sustainable community development.

The Green Building Program staff is recognized internationally for expertise in “green” construction. The background of our team is made up of the full spectrum participants in the building industry with architects, builders, engineers, government policy-makers, marketers, businesspeople, educators, project managers, and also consumers. Our experience covers residential (affordable, speculative, and custom), multi-family, commercial, high-tech, and institutional. All of our team members have strong experience in the realities of developing, writing, marketing, and implementing guidelines and programs effectively. We strongly emphasize regional appropriateness and developing educational efforts that are designed specifically for the local conditions. We all have many years of field experience and know what building professionals and consumers will and will not accept. We offer a unique and highly qualified team with a broad range of talents.

Both Frontier Associates and Austin Energy enjoy excellent relations with a pool of experienced and specialized green building subcontractors, which we can call upon fairly quickly to add any needed skills or services to this program.

Personnel

Frontier Staff

Bill Brooks, Chief Executive Officer. Mr. Brooks has become a leading energy efficiency resource for many of the major utilities in the Southwest. His recommendations have resulted in annual savings of millions of kilowatt-hours of electricity for utility customers throughout the United States. He is responsible for marketing and energy efficiency program consulting services to electric and gas utilities including product development, screening and selection, marketing/business plan development, regulatory impact analysis, corporate strategic fit analysis, program evaluations, and monitoring and evaluation services.

Prior to joining Frontier, Mr. Brooks was VP and Managing Director-Consulting for Planergy, one of the largest energy services firms in the US, where he advised utility clients on energy efficiency and renewable energy program design. He has also worked for Gulf States Utilities Company as Commercial Marketing Administrator and as Supervisor - Customer Services responsible for defining program objectives, assessing market potential, selecting appropriate technologies, and implementing promotional activities to achieve objectives. He has directed market research and end-use metering

projects supporting utility programs, testified on efficiency and renewable energy programs and provided regulatory support for related utility filings.

Mr. Brooks has presented testimony before City Councils, Texas Senate and House Committees and before the Public Utility Commission of Texas. Mr. Brooks earned his Bachelor of Business Administration degree at the University of Texas at Austin and completed post-graduate work at Lamar University, Beaumont, Texas.

Jay Zarnikau, Ph.D., President. Dr. Zarnikau has pioneered the development of new pricing strategies for electric and water utilities, and contributed to significant advances in the state-of-the-art in utility planning. He has also assisted large industrial energy consumers in rate negotiations and energy procurement activities.

Dr. Zarnikau is responsible for providing assistance in the design and implementation of energy efficiency programs and consulting assistance in the areas of utility resource planning, electricity pricing, rate analysis/design, program evaluation, demand forecasting, and energy policy.

Dr. Zarnikau formerly served as the Manager of the Energy Strategies Research Program at the University of Texas at Austin Center for Energy Studies, where he supervised and conducted research on energy pricing, planning, and policy issues.

For over seven years, Dr. Zarnikau was with the Public Utility Commission of Texas, holding various positions, including Director of Electric Utility Regulation, supervising staff activities and preparing and defending testimony in numerous proceedings on topics including load forecasting, rate design, cogeneration, system planning, demand-side management program impacts, billing determinants, wheeling, and computer modeling.

Mr. Zarnikau earned his Bachelor of Business Administration and Economics at State University of New York. He then went on to earn his Ph.D. and M.A. in Economics at the University of Texas at Austin, Austin, Texas. His publications include articles in *The Energy Journal*, *Resource and Energy Economics*, *IEEE Transactions on Power Systems*, and *The Electricity Journal*.

Bruce Mast, Senior Associate. At Frontier, Mr. Mast contributes key technical expertise for marketing and energy efficiency program consulting services to electric and gas utilities including market research, competitive assessment, product development, forecasting, marketing/business plan development, and monitoring and evaluation services. Mr. Mast has emerged as a leading advocate for integrating diffusion of innovation concepts into conventional utility evaluation and forecasting methods. This approach incorporates key concepts from economics and communications theory to better understand customer responses to energy efficiency programs and new product commercialization.

Prior to joining Frontier, Mr. Mast was VP at Pacific Consulting Services, where he directed all facets of market research and program evaluation activities. In this capacity, he directed development of recommendations to harness market forces to improve

energy efficiency in California's new construction industry. He also authored a major portion of a report reviewing and summarizing fourteen groundbreaking market effects studies in California. His market research activities extended from construction practices to evaporative cooling technologies to residential light fixtures. His program evaluation activities covered the spectrum, from new construction to retrofit, from impact to process evaluation, from residential to commercial and industrial, from incentives to information programs. As a project manager, he directed data collection and analysis activities associated with phone and mail surveys, focus groups, and mystery shopper visits.

Mr. Mast also brings to the project extensive local government experience, having served on the Albany City Council from 1994 to 1998. During that time, he initiated and chaired a community process to formulate the City's Youth Master Plan and represented Albany on the Alameda County Congestion Management Agency. In his final year on the Council, Mr. Mast served as Mayor and guided reconstruction of public facilities in the city's primary retail corridor. Mr. Mast earned his Bachelor of Arts degree in physics at Rice University, Houston, Texas.

Philip Audet, Senior Associate. Mr. Audet is a leading national resource on mass market energy efficiency programs, program administration and appliance energy efficiency. He has established and managed projects that have resulted in the installation hundreds of thousands of energy efficient appliances. Mr. Audet has extensive experience with all aspect of residential, low-income and commercial and industrial energy efficiency implementation projects.

Mr. Audet is responsible for standard offer program design support, marketing plan development and consulting services related to field services delivered by utilities and their contractors. He has participated in development of deemed savings values for Texas' statewide standard offer program development and has worked on the design of a residential/small commercial standard offer program. Mr. Audet is providing marketing support for new product development for a product development consortium.

At Planergy, Inc., Mr. Audet was responsible for the business development and operations management of Planergy's Field Services Division, which comprised 80-90% of the Company's revenues and employees. Responsibilities included the management of Planergy offices in eight states.

Mr. Audet earned his Bachelor's degree in Chemistry at Holy Cross College, Worcester, Massachusetts.

Austin Energy Staff

Richard Morgan, Program Manager. Mr. Morgan directs the Austin Energy Green Building Program, its staff of fifteen experts and an annual budget of \$1.5 million. His concentration is on education, affordability, buildability, new construction, remodeling, and green and energy-efficient systems and practices. Mr. Morgan's 28 years of experience in the construction industry, including five years as a CA licensed general

contractor (CA Lic. # 587401) adds valuable hands-on and regional experience to this team.

Marc Richmond, Project Manager. Mr. Richmond coordinates the Green Building Program's residential green building section educating builders and homeowners on the specifics of building green homes. In addition, he coordinates the Program's consulting division working with cities and utilities to develop and improve their own green building programs. His concentration is on designing green guidelines and programs that are understandable and buildable for professionals, understood to be valuable by consumers, and have all of the necessary elements and partnerships to work in the field in the long term. He highly values clear guidelines, good writing, and effective marketing. His experience as a builder, policy-maker and as a businessperson makes him focus on simple, effective solutions that will make the target audience take the actions sought.

Mr. Richmond earned his Bachelor's degree in Economics from Moravian College, Bethlehem, Pennsylvania. He then went on to earn two Master's degrees in Business Management and in Energy and Environmental Policy from the Claremont Graduate University in Claremont, California.

Maureen Scanlon, P.E., C.E.M., Engineer. Ms. Scanlon coordinates the Green Building Program's commercial division. Her concentration is on energy efficient construction and all of the related design, analysis, and code issues. She brings a wealth of experience as an energy analyst, HVAC designer, and as co-editor of "Guidelines for a Sustainable New Austin Airport" and "City of Austin Sustainable Building Guidelines Volumes I, II, and III."

Ms. Scanlon earned her Bachelor's degree in Mechanical Engineering from the University of Texas at Austin, Austin, Texas.

Lee Gros, Project Manager / Architect. Mr. Gros is a registered architect with the Green Building Program's commercial division educating architects, builders, and building owners on the designs, practices and materials used to design, build and maintain energy and resource efficient buildings. He has a concentration on daylighting, the design/build process, and facilitation. Prior to his work at Austin Energy, he demonstrated his ability to develop and promote sustainable building activities to builders and consumers through his experience with the State Energy Office in establishing the sustainable schools program with the State of Texas.

Mr. Gros earned his Bachelor's degree in Architecture from the University of Houston, Houston, Texas.

Jill Mayfield, Marketing Specialist. Ms. Mayfield coordinates the Green Building Program's marketing and public outreach efforts. Her concentration is on simple, effective marketing and public education which gets the audience's attention, informs them of the issues, and then prompts them to take action. She has many years of experience promoting environmental and green building issues and programs and in developing educational materials and publications through all types of media. She offers

a perspective on laying out information in a fashion which is readable, attractive and useable by the audience.

Ms. Mayfield received her Bachelor's degree in Journalism from the University of Texas at Austin, Austin, Texas.