
2007 Environmental Audit

Unitarian Universalist Church of Berkeley

November 17, 2007



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The UU Church of Berkeley Green Committee is striving to advise, educate and provide leadership to the congregation in becoming more environmentally responsible. The Committee is working within the UUCB governance structure and collaboratively with the Unitarian Universalist Ministry for the Earth and the UU Legislative Ministry to promote environmental sustainability in our church home and in the wider world.

The Committee is examining our Congregation's environmental "footprint" along a number of dimensions, including:

- Climate Change, and Energy Use
- Water Use
- Toxics
- Recycling and Material Use
- Transportation
- Food

We are also reviewing our Church's programs in Education and Worship, and looking at ways in which we can extend our reach towards Environmental Justice.

Becoming a UU "Green Sanctuary" was one of the priorities adopted by the congregation in the 2006-2007 dot voting. This environmental audit report is the first step along the path of becoming a Green Sanctuary. It will be followed by a set of recommendations in each targeted area, which will be implemented in a least 12 projects as part of the certification process.

We welcome your input. Please send your comments to Victoria Bowen Victoria Bowen (vixemail@aol.com) or James Schinnerer (jamesoutwest@yahoo.com.)

Dishwasher: needs a new soap pump. Use of dishwasher to avoid use of disposables needs to be emphasized.

Dishware: the kitchen should remain adequately stocked (as it now is), to mitigate the temptation to use disposables. (However, wine glasses are in short supply.)

Refrigerators: need a new compressor to be more energy efficient.

Freezer: a newer model is recommended. Since freezer is opened mainly on Sundays and Thursdays, an upright model might be preferable over the current chest model (a trade-off between the theoretical efficiency of a chest type, and the actual efficiency of an upright where items are easily located and cleaning is straight-forward). An upright would free several square feet of floor space, as well.

Ovens and stoves: have been retrofitted so they don't use pilot lights. No change recommended.

Washer/dryer: consider installation of coin-operated stacking commercial machines, to discourage use of paper towels and reduce waste of soiled cloth dish towels (which often rot before being washed, and are then thrown away). Also, might decrease use of plastic tablecloths. Plumbing and power are available where the old coffee urns currently reside (wasted space). Line-drying of wash is probably not practical, hence a dryer is recommended.

Recycling: Current system works well (though bins are not very conveniently located).

Trash: includes much unnecessary waste. Education is needed to discourage purchase of foods with excessive packaging. Use of paper towels can be reduced with use of a washer. For food waste, see below.

Composting: No composting is done at present. A composting system would have to include education (signs, etc.), frequent removal to exterior bins, purchase of rodent-proof bins, and tending of those bins (turning or tumbling). This should dovetail with composting of yard waste (not currently done; waste is hauled away). - *Investigate sanitation company pickup of green waste*

Plastic bags: shopping bags are routinely thrown away. Recommend education against accepting bags at point of purchase, and a system for reusing those bags which show up in the kitchen (including transfer to bins at both ends of our fire road, for use by dog-walkers).

Food: Coffee is fair trade certified [**Susan will verify exact coffee certification – fair trade/shade grown/organic, etc.**]. Food for Thursday night supper and other events is generally bought without regard to whether it is local or organic.

UUCB has endorsed the U.N. Millennium goals, which is informing and motivating our Adult and Youth RE Programming.

Adult Education:

Two recent UUCB environmental offerings were discussion groups, curricula by Northwest Earth Institute focusing on Deep Ecology and Voluntary Simplicity.

A third course was given by Craig Scott about the 7th Principle Project and global warming. Green Committee members also attended a movie at PSR given by water rights activists.

In the Spring of 2008, UUCB will host a CO2 reduction workshop, called “Lose 5000 Pounds, Cool the World Workshop.” The workshop will present practical tools for reducing ones’ personal carbon footprint by 5000 lbs with a 30-day “Low-Carbon” diet.

Summer personal theology program: July 22, 2007, Dr. Seaborg presented “Global Environment: Threats & Solutions,” which focused on international environmental concerns.

Youth Education:

The UU Legislative Ministry (UULM), our denomination's voice in Sacramento, is allied with our RE program, doing programs with 3rd to 6th graders. Global warming and water issues is the focus of our environment project, which will engage children in planting seeds for an herb garden for the UUSC Snack Table and our lunches. The class will discuss soil, light, water, the absence of pesticides and herbicides, and discuss CA's water situation.

The RE program will participate in the U.N. Millennium Goals project “The Plant for the Planet: Billion Tree Campaign”

AC Transit bus line comes up the Arlington to within a few blocks of UUCB. UUCB has detailed directions on our website for getting to church by public transportation: <http://www.uucb.org/directions.htm>

There is a Bike rack in front of the church, used by four church members.

Carpooling was successfully used for Bring a Friend Sunday this year (2007) and a transportation survey was done.

There is a UUCB rideshare program that matches people requesting rides to those offering, and there is a regular rideshare table at coffee hour. However, it has seen only limited use.

The wide area at the south end of the fireroad (aka “the grassy knoll” is used as parking by as many as 8 cars (so far) on Sundays. It appears this practice can continue without need to pave the area.

Susan Lankford is coordinating carpooling for the choir on Sundays, and has seen early success.

Passenger automobiles emit about 1 pound of carbon dioxide for each mile driven. Assuming that 250 cars are driven to church during an average week (including week nights and Sundays), with an average round-trip of 10 miles, 2500 lbs of CO₂ is generated per week, or 65 tons annually. (Compare this to UUCB’s annual CO₂ emissions of about 100 tons due to electricity and natural gas usage.)

Currently UUCB investments are directed toward socially responsible investing. UUCB's endowment is invested with the Unitarian Universalist Association's general endowment fund, which has a specific set of socially responsible investment guidelines which can be found at <http://www.uua.org/documents/finance/investmentpoliciesguidelines.pdf>

UUCB's by-laws (http://www.uucb.org/boardot/bylaw_draft_050307.pdf)
State:

In keeping with Unitarian Universalist Association guidelines, expenditures and investments must meet social responsibility criteria. All such purchases and investments shall be from companies: that do not produce products, offer services, or operate in a manner which might be unsafe to the consumer or threatening to our environment; that are not predominantly involved in the production of war material; that are not dependent on discrimination on the basis of race, color, sex, disability, affectional or sexual orientation, age, national origin, or religion; that do not exploit the poor or deprived for their business success; and that provide safe and healthy

It has been suggested that the Green Committee undertake a more thorough review of the UUA's investments, and education the congregation about "green" investing.

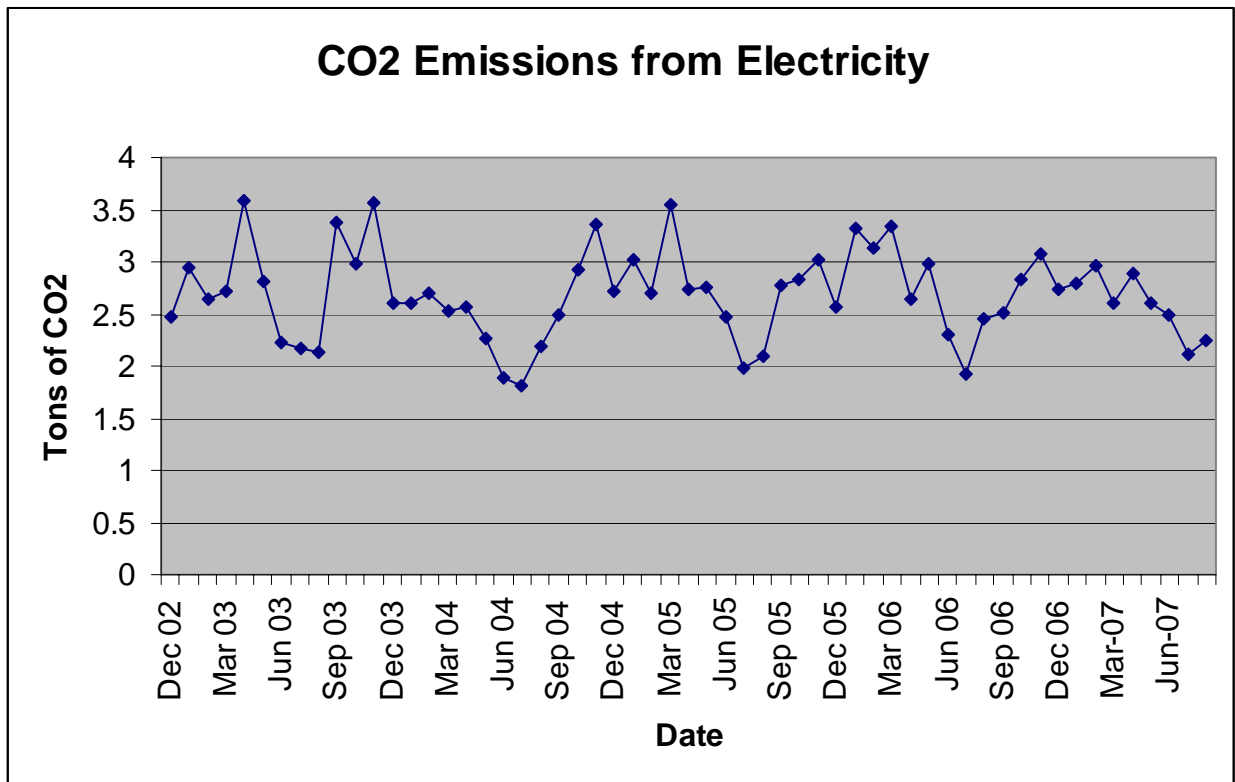
Section 6

Resource Usage (Electricity, Gas, Water)

Annual electrical usage

Annual	KWh	Tons CO2
2003	110680	33.76
2004	98520	30.05
2005	106640	32.53
2006	108960	33.23
2007	67880	20.7

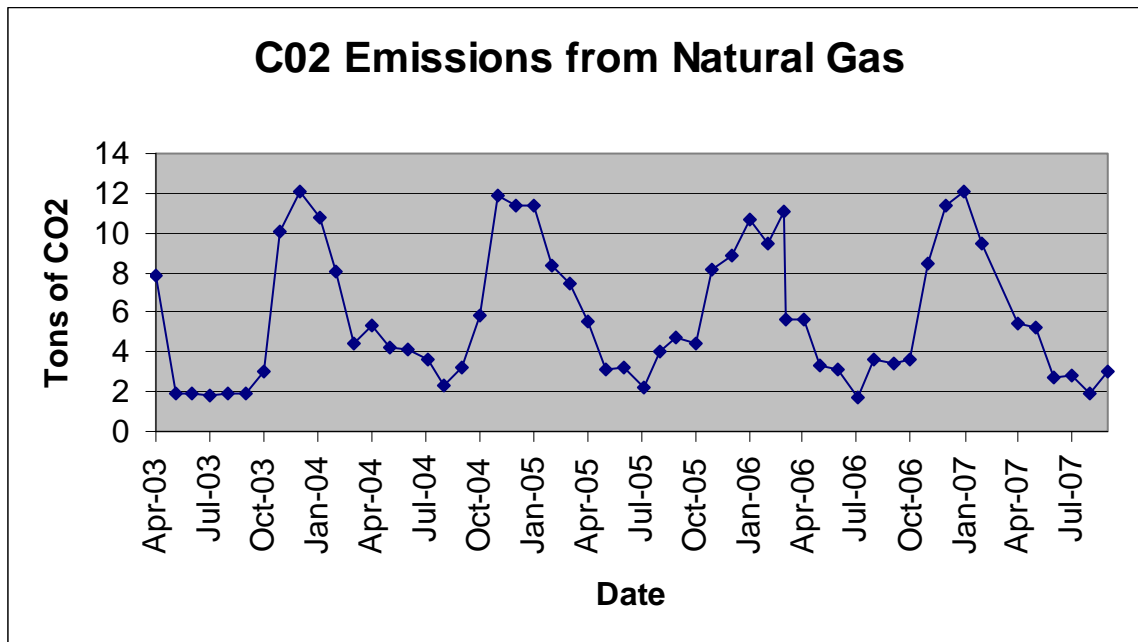
2007 data through August 2007



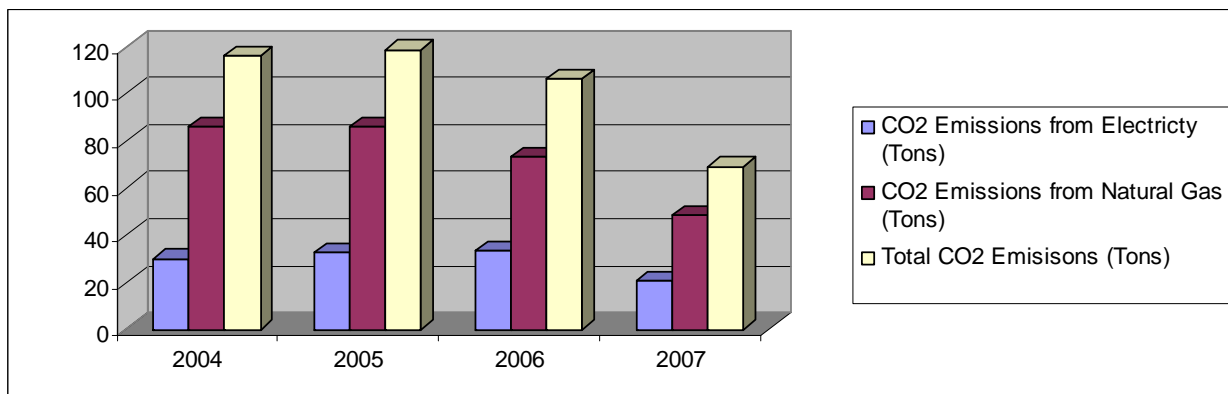
Annual natural gas usage

Year	Therms	Tons CO2
2004	12,640	86
2005	12,351	86
2006	12,167	73
2007	8056	48

2007 data through August 2007



Annual UUCB CO2 Footprint



Gas and Electricity Usage through August 2007

Electrical:

- Light bulbs. Currently most bulbs that can be practically changed to fluorescent are. Most (all?) T12 fluorescent lights have been changed to more efficient T8 fluorescent lights. LED lights are used at the entrance to the church. – *Ensure energy efficient bulbs are being used and work on turning lights off when not needed and/or better control of lighting*
- All exit lights have rechargeable battery backups.
- Computer monitors – currently all monitors are CRT. *Recommendation to convert CRT monitors to LCD or optimize power setting on computers*
- Lights are often left on. Motion sensor switches installed in bathrooms. *Consider motion-sensitive switches throughout.*

Heating:

- *There is a digital thermostat in the Fireside room but manual ones in most other rooms and the Sanctuary. Also some detailed info in the audit on the music program at the end of this report.*

Water usage:

- No flush urinals (*East Bay Park District example (\$400-500)*)
- Check outdoor watering system (*Drip irrigation, check timer schedule, ensure they are off during rainy season*)
- Greywater is not currently salvaged. *To investigate this possibility further, we should consult with professionals regarding the entire building. Possibilities include use in landscaping and dispersal in a leach field.*

Most paper is 30% post consumer recycled content and there is an effort to use the backside of paper that is no longer needed (such as faxes). We're currently using Staples as a one-stop shopping source for office supplies.

- UUCB has cut down the order of service to one page and are doing electronic announcements and posting in the atrium.
- UUCB uses recycled white copy paper. Before switching to Staples, UUCB was using the company *Give Something Back*, that donates a percentage of profits back to the community. Unfortunately they discontinued the colors of paper we use and Kendall Anderson informed Anne Greenwood that we will be using Staples now, consolidating our vendors for office supplies. [Which means less gasoline used to deliver our office supplies.]
- We use paper for pledge statements (but do not mail them unless a balance is due), Beacon mailing, some board reports (we are now trying electronic board reports and agendas and minutes). Internal bookkeeping/record keeping is done double sided as much as possible.
- The monthly church newsletter is published monthly in PDF form on our website. Currently, all church members receive the Beacon, without the choice of opting out in favor of downloading the electronic version. *Recommendation: allow people to opt out of Beacon mailing.*
- Audit of other office supplies still needed.

- See list of current supplies at the end of this section.. Currently some items are already being switched over to healthier alternatives. There are many opportunities for improvement.

Cleaning:

- Carpet cleaning
- Floor, glass, cleaning
- Kitchen Dishwasher soap and related kitchen cleaning supplies
- Bathroom hand soap
- Polishes
- Oven cleaner

Disposables:

- Toilet paper, Paper towels – *Ensure recycled content*
- Hand soap – *Look for less toxic, biodegradable soap*

Pest and weed control:

- AANTEX pest control – rats, mice, ants – *Consider creating simple IPM plan, finding a service that specializes in non-toxic methods, or dealing with in house.*
- Weed control – Roundup – *Find non-toxic method to control weeds*

Grounds maintenance:

- Leaf blowers and weed whackers (gas) - *Consider conversion to electrical (reduced pollution, noise and maintenance (~\$80 each)*
- Yard Waste – *Compost or at least ensure being put in greens bin and not garbage*
- Plant selection - *Currently no plan for native, drought tolerant or beneficial plants. Consider planning in conjunction with the Landscape Committee for a low maintenance, native/beneficial landscape.*

Building materials:

- Painting, redecorating (rugs, fabric, wood) Awareness of issues such as sustainability and chemical offgasing is increasing, but there are no guidelines currently in place. – *use “green”, low toxic and sustainable materials (Eco-Home Improvement store in Berkeley)*

List of janitorial supplies as of June, 2007

These are all obtained from Pastime Ace Hardware and USB Supply of Richmond.

Cleaners

- Envirox H2Orange all purpose cleaner.
- 409 all purpose cleaner
- Ajax cleanser
- Comet cleanser
- Brasso Chrome & Brass polish
- Turtle Wax Rubbing Compound
- Mothers Aluminum polish
- Simple Green all purpose cleaner
- H2Orange Grout Safe brick and tile floor cleaner
- Pledge furniture polish
- Clair Stainless Steel polish
- Rug Doctor Carpet shampoo
- Ace glass cleaner
- Windex Glass Cleaner

Hand Soaps

- GenLabs Coconut hand soap
- GenLabs Antibacterial Hand Soap
- USB pink hand soap

Kitchen

- Kitchen Kleen automatic dishwasher detergent
- Eazy-Off oven cleaner
- Joy dishwashing liquid
- GenLabs Ge-Zyme drain opener
-

Pest and Weed Control

- Round-Up weed killer (no longer used since Don Wollwage became Facilities Manager)
- Ortho Wasp Killer

Ways in which our church and congregation demonstrate respect for and interaction with nature:

- Beautiful location is on top of a hill overlooking the SF Bay on a large piece of land with extensive landscaping and trees.
- When one walks into the church, one enters an atrium with grown trees, a skylighted roof and a full wall open view to the Bay.
- The patio is an extension of the atrium and is used for some worship services, including the annual Blessing of the Animals.
- One of the Meditation groups does walking meditation on the grounds.
- The Peace Memorial is atop another hill and is a tranquil, meditative space.
- The church owns a country retreat in nearby Sonoma County, Freestone. Many retreat week ends are held there as well as an annual Memorial Day worship and picnic. Members may rent the retreat privately for personal and family recreation. There is an active church committee which maintains the property.
- The congregation endorses, and many members participate in, the annual coastal clean-up held state wide the second Saturday in September.
- Many members meet for hikes in the local Tilden park with an annual hike there on January 1.

The Worship Service always has a dramatic floral centerpiece,. The floral arrangements are sometimes made from local “backyard” sources, and are sometimes purchased from wholesalers..

Some Sundays such as Earth Day have environmental themes. This year’s Earth Day service included and “Edible Altar” in the atrium, consisting of backyard produce contributed by members.

More info is needed on this topic. A more conscious and consistent integration of environmental themes in to the worship service would be helpful.

Resource Usage

Conversation with Chris Nordwall, former UUCB Organist and professional Organ Technician and other individual's familiar with the music program and how our resources are used.

- According to Chris Nordwell, the organ is very sensitive to temperature. Chris gave the example: if the pitch of 440 (A), is perfectly in tune at 72°, the pitch will go sharp/flat one cent (degree of pitch) every 4°. Chris recommends that the sanctuary should never be allowed to get below 58°.
- He feels that in our climate and given how warm the sanctuary usually is, he feels that there is “no reason to turn the heat on”.
- Chris said that, on a typical Sunday, the organ is in tune when he comes in, and by the end of the service, the organ has gone out of tune (sharp) due to body heat, just from the number of people in the sanctuary. He opens some internal flaps, inside the various pipe compartments, to try to keep it cool. He feels that from the end of October until March, just a little heat would be needed to avoid extreme swings in temperature. The problem he finds with controlling the heat is the thermostat is in the basement hall under the stairs and in no way reflects the true temperature in the Sanctuary.
- There is another thermostat in the back, by the lighting and sound boards, that Chris has been told controls the heat in the Atrium, but he doesn't think it works.

Chris Recommends:

1. Digital Thermostats at the front and the back of the Sanctuary to accurately control the heating.
2. We also talked about the lighting and Chris feels we need new settings on the light controls to turn off the flood lights over the Bass section, at the back of the Chancel and the bank of floods over the podium, in front of the Chancel. There are 250 watt, incandescent flood lights that don't need to be on, every time the lights are turned on in the sanctuary.
3. Chris suggested that I talk to Marilyn Hertzberg about Sandra Soderlund's teaching schedule and how many lights she turns on.

Other Conversations

Conversation with Marilyn Hertzberg: (regarding Sandra Soderlund's teaching schedule)

- Sandra Soderlund is scheduled to use the organ Mon, Wed and Friday from 1 PM to 4 PM. Marilyn doesn't know how many students Sandra sees, but she knows that Sandra doesn't usually turn on the heat or all the lights when she is here. She just uses the organ light and one bank of overhead lights.

Conversation with Don Wollwage:

- Don is a choir member familiar with the lighting system, and recently became Facilities Manager. Don often operates the lights for Sunday service's and special events. Don says he only turns the floods on for the Sunday service.
- There are two light panels that can be controlled independently. However, if any changes to the settings are made during the week, they would need to be re-set for the Sunday service. The current system is not set up to easily change settings, back and forth.
- Just last week, Don went up on a ladder and changed some burnt out lights. There were complaints that the flowers, on the Alter, were not getting enough light and people were also having trouble reading their music in the Bass section.
- There are two banks of 15, 250 watt floods.
- Don also mentioned that there is also a thermostat in the Choir Room, for regulating the heat there. He does not know what the thermostat at the back of the Sanctuary is used for.

Conversation with Connie Pyle:

- Connie Pyle was the, long time, Librarian for the Choir and Music Program. Connie retired from Librarian duties at the end of last season. I felt Connie had a greater perspective on paper use, over the years, rather than Carol Hudson, who just started as Librarian. Connie said paper use has varied over the years. Edwin Barlow used tons of paper and Eric Howe, very little. She said Bryan Baker is very conscious of our resources and tries to avoid using too much paper. She estimates that we currently use about 300 sheets of copy paper a month. This includes copying hymns for use on just one Sunday or to copy sheet music to use until music Bryan has ordered comes in. The Choir is growing and there is sometimes not enough music for the number of people that want to sing.

Conversation with Mark Johnson, former Facilities Supervisor **[Should update with New Facilities Supervisor Don Wollwage – Ken McPherson to do?]**

- It turns out that the thermostat at the back of the Sanctuary is the master heat controller for the whole Sanctuary. The “thermostat” in the downstairs hall is simply the timer to turn the furnace on and off. The furnace comes on at 5 AM on Sunday and goes off after the service. It stays off until Tuesday, and then is on for a few hours each day.
- Mark is in the process of putting together a facilities handbook, so everyone (especially the office staff) will know how to turn all the switches and timers that control heating and lights in all the buildings. I did not get a sense of how soon this would happen.
- In this writer's humble opinion, it seems that some sort of facilities manual is imperative. This should be available (perhaps through the coordinating team?) and be accessible to committees that use the various rooms in the church.
- Mark Johnson was the only person I talked to that knew exactly how everything works. Franklin and the other facilities workers probably know how to turn things on and off, but if they are not around, we are on our own. Also, new employee's (i.e. Chris Nordwall) should get a better orientation about our heat and lighting systems.

No audit of the Freestone Retreat Center has yet been conducted.

