

**ENERGY EFFICIENCY
AND RENEWABLE ENERGY IMPROVEMENTS/
TOWN ENERGY BANK PROJECT**

Proposing Agency: Town of Chapel Hill

Bid Opening: May 27, 2003

**Sustainable Community Development Project
RFP #13-38950**

**State Of North Carolina Department of Administration
State Energy Office**

Project Description, in Brief

Please see Illustrations 1, 2 and 3, attached

The Energy Efficiency and Renewable Energy Improvements / Energy Bank Project would improve the energy efficiency of three Town-owned facilities, incorporate renewable energy technologies and water conservation practices at one of the sites, and establish a new “energy bank” for funding future energy efficiency/renewable energy projects.

The focus of the project is Fire Station Number 1, a highly visible location on a busy street. Work at the Fire Station would start with an energy audit followed by the installation of energy efficiency improvements, a photovoltaic system and solar hot water panels. Also at the Fire Station, the project includes the addition of xeriscaping at the site to reduce water consumption and set an example for the community.

Two nearby Town-owned buildings, the Post Office/Courthouse and Inter-Faith Council Shelter, would be included in an energy audit identifying innovative solutions for incorporating energy efficiency at the two sites. The audit would be followed by the installation of energy efficiency projects at both buildings, currently scheduled for major renovations in fiscal year 2003-04 as part of the Town’s Capital Improvements Program.

The proposed energy audit would complement another significant element of the project: the establishment of an “energy bank.” The energy bank would be a new Town budget item that would capture energy savings from energy efficiency improvements at Town facilities to pay for future energy efficiency projects at Town facilities. The proposed energy efficiency projects and renewable energy installation would help implement the energy bank concept by providing the initial cost savings “deposited” in the bank.

The project would save taxpayers money, provide environmental benefits and raise community awareness about green building practices. The lessons learned from the project will be important because the Town Council is considering proceeding with a “green infrastructure” bond referendum this fall for energy efficiency projects throughout town, bicycle and pedestrian improvements and other projects.

The project is called a “demonstration project” because it would serve as an example for completing sustainability projects at other Town facilities (including four fire stations) as well as provide lessons for other North Carolina communities.

On May 12, 2003 the Town Council adopted a resolution endorsing the Town’s application for this grant (please see Attachment 1) with a commitment of up to \$43,750 in Town funds as the 25 percent match of a \$175,000 grant.

1. Corporate Background and Experience**Background**

The Town of Chapel Hill is located principally in Orange County with a small section in Durham County in the north central portion of North Carolina on the Piedmont Plateau.

The Town, which was incorporated in 1819, presently covers an area of 21.1 square miles and has a population of 52,440 according to the latest estimate, issued by the State of North Carolina for July 2002. The Town's largest employer is the University of North Carolina at Chapel Hill, the nation's oldest public university.

While Chapel Hill is best known as the home of the University of North Carolina at Chapel Hill, the Town over the years has achieved an identity of its own as a progressive leader in sustainable planning and development. For example, the Town:

- Enforces growth management policies that help contain development within a defined geographical area, protecting rural areas to the north and south of Town from urban sprawl;
- Provides a Town-wide fare-free bus service, in cooperation with the University and the Town of Carrboro, reducing the community's reliance on the automobile;
- Requires that new and renovated Town facilities to be designed to exceed energy efficiency requirements of the state building code;
- Promotes the use of solar technologies as a local partner in the Department of Energy's Million Solar Roofs Initiative;
- Has joined the Cities for Climate Protection campaign and is currently planning to undertake with other partners in Orange County a greenhouse gas inventory and emissions reduction plan;
- Is considering pursuing a "green infrastructure" bond in November 2003 for funding energy efficiency projects, and sidewalks, bicycle facilities and greenways improvements.

Government Structure

The Town has a Council-Manager form of government. The Town Council is comprised of a Mayor and eight-member Council, all of whom serve four-year terms. The Council appoints the Town Manager and Town Attorney. The Town Manager is the chief administrative officer of the Town, which employs more than 660 people. Town departments are responsible to the Town Manager for the provision of public services.

Budget

The Mayor and Council's decisions in adopting a budget are in the form of an ordinance allowing expenses and raising of revenue during the coming budget year, an ordinance authorizing employee positions and wage and salary ranges, resolutions adopting fees and charges and related actions.

In accord with normal accounting and budgeting practices for cities and towns, Town services supported partly or entirely with general taxes are budgeted in a General Fund. The General Fund includes costs and revenues for police, fire, refuse collection, street maintenance and other public works services, human services, planning, construction inspections, engineering, library, parks and recreation, and general administration and support services.

The budget for General Fund expenditures in 2002-03 total more than \$36 million in fiscal year 2002-03. The public transportation, public parking, public housing, internal service funds and supplemental downtown district services are budgeted in separate funds.

Town Plans and Policies Promoting Sustainability

In 1997 the Town Council adopted an ordinance requiring that “energy-saving features” be considered for new Town buildings and major renovations of existing buildings. Design documents shall include an explanation of how the features listed below are incorporated into the design or, for those features not incorporated, an explanation of the financial or operational reasons why the feature was omitted from the design.

- Solar orientation, with the long axis facing south;
- Use of daylighting;
- Use of appropriate glass for minimizing heating and cooling loads;
- Insulation beyond minimum standards;
- Use of renewable energy for heating and cooling;
- Use of renewable energy for heating and swimming pools;
- Use of water conservation measures including dual water systems if available;
- Landscaping for summer cooling effect and for blocking winter winds;
- Use of energy efficient motors;
- Use of energy efficient lighting;
- Use of energy management systems;
- Parking areas designed to limit heat absorption;
- Use of building materials and color to decrease cooling load.

The Town’s Comprehensive Plan, adopted in 2000, contains goals and strategies for promoting environmental stewardship and resource conservation. For example, the Plan recommends growth management strategies to improve water quality by enhancing the Town’s stormwater management regulations, preserve open space by adopting conservation development principles, and improve air quality by adopting and implementing a greenhouse gas emissions reduction plan. In 2001 the Town Council amended the Comprehensive Plan to strengthen policy statements related to energy efficiency; the Plan states that the Town “shall encourage site planning, landscaping, and structure design which maximize the potential for energy conservation by reducing the demand for artificial heating, cooling, ventilation, and lighting, and maximize the use of solar and other renewable energy resources.”

In November 2000 the Town appointed citizens from Chapel Hill and other parts of Orange County to a new Million Solar Roofs Committee. The Committee in June 2001 presented the Town Council with a Chapel Hill Million Solar Roofs Action Plan containing strategies for achieving the Town’s goal of 500 new solar energy systems installed by 2010. The Committee meets once every two months to implement projects using funding from a grant and the Town. The Council in September 2002 approved implementation of the Plan, with staff support.

Recently the Town Council established a Committee consisting of three Council members who are reviewing Town policies related to sustainability, energy and the environment (Please see Attachment 2). On April 28, 2003, the Town Council received a petition submitted by the Committee and is exploring calling a "green infrastructure" bond referendum this fall to raise funds for greenways and sidewalks and improving the energy efficiency in town facilities and operations as a means for establishing an energy bank (please see Attachment 3). The Town became aware of the energy bank approach at a Town Council-sponsored workshop in March 2003 involving the energy coordinator for Ann Arbor.

Project Management Experience: Sustainability Projects

The Town regularly implements substantial capital projects, including the recent \$700,000 renovation of the Police Headquarters, the \$1.2 million renovation of the Hargraves Community Center, the construction of a \$3.3 million city park, downtown streetscape improvements, and other projects. In recent years the Town has undertaken several small-scale but nevertheless significant environmental-friendly/sustainability projects, including:

- **Photovoltaic panels at Hargraves Community Center.** Using a 1999 Virginia Alliance for Solar Electricity grant and a Town contribution of \$18,000, the Town installed a 3.5 kilowatt photovoltaic system at Hargraves Community Center on North Roberson Street. The system provides supplemental power to the center and raises community awareness about the use of solar technologies.
- **Million Solar Roofs Action Plan.** The Town contracted with a consultant for \$5,000 to work with the Solar Roofs Committee to develop an Action Plan for implementing strategies for meeting the Town's goal of 500 new solar installations in the community by 2010. The Committee presented the Action Plan to the Town Council in July 2001, and has been meeting regularly since to complete solar projects.
- **Projects promoting the use of solar energy.** A \$4,000 U.S. Department of Energy Million Solar Roofs Initiative grant, awarded in 2002 by the N.C. Solar Center via the N.C. Energy Office, is funding projects aimed at raising community awareness about solar energy programs and benefits. Town staff is working with the Town's Solar Roofs Committee to complete the projects. The Town used grant funds to pay a website developer to develop a solar energy website; see <http://www.chapelhillsolar.org>. A sign company is developing promotional materials for the Committee and constructing signs which will highlight the Town's photovoltaic system at the Hargraves Community Center. The projects will be completed by the end of May 2003.
- **Alternative Fuel Vehicles.** The Town of Chapel Hill currently has seven compressed natural gas vehicles (CNG) and two electric pick-up trucks in our automotive fleet. To support these vehicles the Town has installed two electric vehicle charging stations, one slow-fill CNG fuel station and one fast-fill CNG fuel station. In fiscal year 2002/2003 the Town will add four more CNG vehicles to our fleet.

- **LED traffic signals.** The Town is installing LED traffic signals when the old signals are scheduled for replacement. Several intersections now have LED signals, which are brighter than old incandescent lamps, use one-tenth as much energy, and are six times more durable.
- **Daylighting at Fire Station Number 5.** The Town's newest fire station, completed in 2000, was designed to incorporate daylighting, providing a passive source of light that reduces the need for electric lights.

The Town draws on area expertise to develop sustainability policies and projects. The Town's Solar Roofs Committee, for example, includes solar installers and architects, as well as other members of the community who have an interest in sustainability/renewable energy issues. Committee members have volunteered to install solar hot water panels as part of a small demonstration project at the Chapel Hill Community Center. Donations of materials from a Committee member and the N.C. Solar Center, and \$3,000 from the Town are making the project possible.

The Town has formed an advisory committee for planning the proposed Town Operations Center that will house the Public Works and Transportation departments. The facility is due to open by the end of 2006. Sustainable design features under consideration at this early stage include bio-diesel facilities, daylighting, natural stormwater management and water reuse.

Other future Town projects could promote sustainable, green building practices, including planned renovations of Town facilities, the expansion of the Town Library, and a potential public-private development on Town-owned sites in downtown.

2. Financial Statement

See Attachment 4 for information related to the Town's most recent annual financial report.

3. Project Organization

Town of Chapel Hill staff would execute the grant proposal by subcontracting with companies that provide the necessary services and equipment, including energy audit and project management consultants, solar installers and suppliers, and landscaping companies. The Town's Solar Roofs Committee would develop a public outreach program, including coordinating with hosts of solar and green building tours, development of an informational sign, and solar workshops highlighting the Fire Station. Town staff will administer contracts to ensure schedules are met and products are delivered as per contract terms as well as work with the Solar Committee.

Key Town staff members who will be involved in project are listed below:

- W. Calvin Horton, Town Manager
- James Baker, Finance Director
- Coco Hall, Interim Purchasing and Contracts Manager
- Jeanne Erwin, Accounting Services Manager

- Bruce Heflin, Public Works Director
- Bill Terry, Internal Services Superintendent
- Chris Berndt, Long Range Planning Coordinator
- Philip Hervey, Senior Planner

4. Technical Approach

The Energy Efficiency and Renewable Energy Improvements / Energy Bank Project would identify and install energy efficiency projects at Town facilities, promote the use of solar energy and water conservation landscaping practices; and help fund future Town energy efficiency projects through the establishment of an “energy bank.”

The project will be a demonstration project for the community and the state because it would serve as a template for improvements at other Town facilities, including four fire stations, as well as provide lessons for other North Carolina communities. The Town would better understand the steps needed to install energy efficiency improvements and incorporate solar equipment at existing and proposed facilities.

The following actions are proposed:

1. **Energy bank.** As part of the energy audit consultant contract (see bullet 2 below), a plan would be developed for establishing an “energy bank,” which would be a new budget item for the Town. Cost savings realized in energy bills as a result of the energy efficiency improvements completed as part of this proposal and other future projects would be earmarked for the “energy bank.” The energy bank is a revolving fund that captures savings resulting from energy efficiency improvements at town facilities. These funds are used as capital for additional projects, which in turn generate more savings, and more funding for the energy bank.

The consultant’s scope of work would include determining how to create an energy bank that incorporates the Town’s current policy of installing energy efficiency improvements in new facilities and major renovation projects. The Council’s policy is to routinely meet high standards of energy efficiency, and to incorporate energy efficiency improvements whenever capital funds are spent on major building renovations.

2. **Energy audit of Fire Station Number 1, Inter-Faith Council Shelter and Post Office/Courthouse.** An initial energy audit would establish the specific energy efficiency improvements that the Town would pursue as part of this project. The energy audit would identify where and how much energy is being used at the three buildings to identify the best approach for maximizing energy savings. The audit would establish priorities for developing a program, as well as set a baseline for measuring the success of improvements made at the facilities by documenting energy use before and after projects are installed.
3. **Energy efficiency improvements throughout Fire Station No. 1.** Some improvements at the 7,100-square-foot building built in the mid 1960s will depend on the outcome of the energy audit. At a minimum, the project will include new energy

efficient windows, light sensors in bathrooms, and workstation timers/power saving devices. Other improvements at the site, pending the outcome of the energy audit, include sealing the bay doors and taking measures to minimize the loss of heating and air conditioning when the bay doors are open. There also could be opportunities for installing "solar tubes," or skylights, which would increase the amount of natural light in the interior of the building.

4. **Energy efficiency improvements at the Inter-Faith Council Shelter and the Post Office/Courthouse.** These two facilities in downtown Chapel Hill represent an opportunity to realize additional cost savings for the energy bank. The Town plans to undertake major renovations at both buildings in fiscal year 2003-04. This proposal would provide funding for installing additional energy efficiency improvements identified in the energy audit and not in the current renovation plans due to cost constraints.
5. **The installation of solar hot water panels on the Fire Station's south-facing roof.** A component of the project will be the installation of solar hot water panels on the Fire Station's roof. The Chapel Hill Solar Roofs Committee considers Fire Station Number 1 a candidate for a solar demonstration project because of the exposure to the sun and its highly visible location on Airport Road.
6. **The installation of photovoltaic panels.** The Fire Station site offers two possible locations for installing photovoltaic panels – either a solar-tracking system mounted on poles in a grassy area by Airport Road, or on the building's roof. The Town would issue a Request for Proposals for installing a 4.0 kilowatt system at the site; the Town would determine the best option based on proposals received, with input from the energy consultant. The energy audit would determine the best approach for using the power supplied by the panels – either as a supplemental source of electricity, or as backup power tying into the Fire Department's generator.

The Chapel Hill Solar Roofs Committee identified the Fire Station as a potential solar demonstration project due to the solar orientation of the building as well as its highly visible location, which would draw attention from motorists and pedestrians.
7. **Water-conserving landscaping.** This portion of the project would attempt to encourage the installation of water conservation landscaping, which would help reduce demand for water during drought conditions. The Town would install water-conserving plants in the area around the sun-tracking photovoltaic panel and in other areas currently covered by grass. Signs such as those found at nurseries or arboretums would be placed next to each unique plant to identify the types of plants used and the ideal conditions for planting them. A path would provide public access into the area, leading to the area photovoltaic panel.
8. **Public awareness.** The Fire Station, Inter-Faith Shelter and Post Office/Courthouse are all in highly visible locations. The Post Office/Courthouse at Franklin and Henderson Streets is located in a busy pedestrian area across from the UNC campus. The Inter-Faith Shelter and Fire Station are both located on Columbia Street/Airport Road; in 2001 an average of 23,000 vehicles a day traveled on this section of road.

Signs posted at all three locations would identify the project objectives and the name of the grant program (North Carolina Energy Office Sustainable Community Development Project). The Town proposes to work with the Solar Roofs Committee to include the building on future green building and solar tours, as well as highlight it in the Town's solar energy website (<http://www.chapelhillsolar.org>). People visiting the website would be able to take a "virtual tour" of the sites after the solar equipment and energy efficiency improvements are made; the Town this year hired a contractor to develop virtual tours featuring several buildings in the area that take advantage of solar/green building practices.

The installation of xeriscaping at the Fire Station represents an opportunity for community workshops on xeriscaping techniques. The community has hosted such workshops. The N.C. Botanical Garden at UNC-Chapel Hill and the Orange Water and Sewer Authority, for example, will present a public workshop on "Waterwise Landscaping" on May 27 in the Council Chamber at the Chapel Hill Town Hall.

Schedule

The table below illustrating the proposed project schedule assumes grant awards would be announced by July 2003.

Proposed Schedule

	2003					2004				
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Building Energy Audit / Energy Bank Plan										
Consultant RFP	█	█								
Consultant Selection		█	█							
Energy Audit			█	█	█					
Energy Bank Study					█	█	█			
Energy Efficiency Projects										
Engineer selected					█					
Project design						█	█			
Equipment installer selected						█	█			
Improvements installed							█	█	█	█
Solar Hot Water System										
Select Vendor			█	█						
Work Performed					█	█				
Photovoltaic System										
Select Vendor			█	█						
Work Performed					█	█				
Xeriscaping										
Select Landscape arch.					█					
Design/Approval						█	█			
Select Vendor							█			
Work Performed								█	█	█

	2003					2004				
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Website / "Virtual Tour"	To be developed after completion of energy efficiency improvements. Anticipate completing virtual tour presentations by May 2004									
Green / Solar Building Tours	To be coordinated with Triangle area green building and solar tours									
Open House Events	Dates to be determined, after completion of projects at station									

The initial step would be the selection of a consultant who would conduct an energy audit of Fire Station Number 1 as well as develop a plan, working with Town staff, for establishing an energy bank. Town funds committed as part of the 25 percent local match would be used for the energy audit/energy bank consultant phase in order to initiate the audit as quickly as possible.

We anticipate an energy audit would take about three months to complete at a building the size of Fire Station Number 1, based on *How to Hire an Energy Auditor* booklet by the California Energy Commission. The target completion date for an energy bank study is January 2004.

Energy efficiency improvements would require hiring a construction manager and engineer; these projects would be completed by April 2004. The solar hot water and photovoltaic systems would be installed by the end of 2003.

The xeriscaping would be relatively simple to complete, but the proposal provides time to design the landscaping in time for planting in the spring, in March and April 2004.

Sustainable Community Development Project Goals

The sustainability goals for the project are:

- Establishing a reliable source of funds for energy efficiency improvements and renewable energy projects at Town facilities;
- Reducing energy use at Town facilities through energy efficiency and solar energy projects;
- Providing a "template" for future improvements at Town facilities, in particular the Town's four other fire stations;
- Setting an example for the community by demonstrating the potential for energy efficiency and renewable energy projects, as well as the benefits of water-conserving xeriscaping.

As the table below illustrates, the Energy Efficiency and Renewable Energy Improvements / Energy Bank Project is structured to achieve many of the goals stated in the Sustainable Community Development Project Request for Proposals.

Goals Addressed in Proposal (*)

Sustainable Community Development Project Goals	Proposed Projects				
	Energy Audit	Energy Efficiency Projects	Energy Bank	Solar Hot Water System	Photo-voltaic System
Sustainable Building Design and Construction	*	*	*	*	*
Sustainable Economic Development	*	*	*		
Renewable Energy Demonstration				*	*
Conservation of Natural Resources		*	*	*	*
Education and Outreach	*				

Sustainable Community Development Project Goals	Proposed Projects			
	Xeriscaping	Green / Solar Building Tours	Website / "Virtual Tour"	Special Events
Sustainable Building Design and Construction	*			
Sustainable Economic Development				
Renewable Energy Demonstration				
Conservation of Natural Resources	*			
Education and Outreach		*	*	*

Sustainable Building Design and Construction

Fire Station Number 1, the Inter-Faith Shelter and Post Office/Courthouse provide substantial opportunities for energy efficiency improvements. The energy audit will identify opportunities for energy efficiency and renewable energy retrofits, such as the use of solar hot water, replacing the existing (gas/electric) hot water system, and installing solar tubes to provide natural light in the interior. The audit will examine the feasibility of updating HVAC systems, upgrading insulation, and installing energy efficient windows. The project also proposes installing a photovoltaic array at the Fire Station for either backup or supplemental power.

Sustainable Economic Development

The project represents a significant opportunity for Chapel Hill to establish a sustainable source of funding through the initiation of an energy bank, in which savings from energy efficiency improvements would be used for future projects. An energy bank would provide energy efficiency and renewable energy opportunities for other Town facilities, including Town Hall, four other fire stations, the Police headquarters, the Town Library and the Town's community centers. The energy bank would supplement Capital Improvements Program-funded renovations by making up the difference between the cost of "regular" equipment and energy efficient equipment.

Renewable Energy Demonstration

The solar hot water and photovoltaic panels would be a substantial component of the project, providing 100 percent of the building's hot water needs and about 9 percent of the electricity needs. The project addresses not only this goal of the Sustainable Community

Development Project RFP, but also several key goals in the Town's Million Solar Roofs Action Plan (please see Attachment 5).

According to Powershift.com, a 4.0 kwh photovoltaic system would result in utility bill savings of \$417 per year, meet 9% of current electricity consumption, produce/save 5,683 kWh of electricity in the first year, and eliminate 12,587 lbs of CO2 emissions in the first year.

The project would be included in the Chapel Hill Solar Roofs Committee's public outreach efforts, including participation in regional green building and solar building tours. The project would be featured on the Town's solar energy web page, www.chapelhillsolar.org.

Conservation of Natural Resources

The installation of xeriscaping in front of the Fire Station would reduce water usage at the site as well as provide a hands-on resource for community workshops on xeriscaping techniques.

The project would reduce environmental impacts through energy demand reduction resulting from the energy efficiency improvements and addition of photovoltaic and solar hot water panels.

Education and Outreach

This project would serve as a "template" for turning other Town facilities into energy efficient buildings. The lessons learned could extend beyond the Town to other local governments in North Carolina and elsewhere; of particular statewide interest would be the development of an energy bank as an innovative means for funding energy efficiency projects.

The Solar Roofs Committee would have the opportunity to include the building on solar building and green building tours which attract people from across the region. The development of a "virtual tour" for the Town's solar energy web site would increase the visibility of the project for people throughout the community and elsewhere.

The xeriscaping, as mentioned earlier, provides opportunities for community workshops, potentially hosted by the N.C. Botanical Garden and Orange Water and Sewer Authority.

Sun tracking solar panels would be positioned so that people could view the technology up-close – a potential learning resource for students at UNC-Chapel Hill and in the Chapel Hill-Carrboro City school system. The alternative location for the PV panels, the Fire Station roof, also is in a highly visible location. Signage installed at the site would describe the project, as well as the related environmental and cost savings.

ATTACHMENT 1

***Resolution Adopted by the Chapel Hill Town Council on May 12, 2003.
The Motion Was Adopted Unanimously (9-0).***

A RESOLUTION ENDORSING THE TOWN'S APPLICATION FOR A SUSTAINABLE COMMUNITY PROJECT GRANT (2003-05-12/R-8a)

WHEREAS, the N.C. Energy Office has issued a Sustainable Community Development Project Request for Proposals for funding energy efficiency, renewable energy and similar projects across the State; and

WHEREAS, the Chapel Hill Town Council on April 22, 2002, established the Sustainability, Energy and Environment Committee; and

WHEREAS, the Town of Chapel Hill's Comprehensive Plan recommends policies that "encourage site planning, landscaping, and structure design which maximize the potential for energy conservation by reducing the demand for artificial heating, cooling, ventilation, and lighting, and maximize the use of solar and other renewable energy resources;" and,

WHEREAS, the Chapel Hill Million Solar Roofs Action Plan adopted by the Council recommends pursuing outside funding sources for solar projects, continuing funding energy efficiency projects in the Town Budget, hiring an energy auditor/educator and install solar technologies at a "highly visible public building;"

NOW, THEREFORE, BE IT RESOLVED by the Council of the Town of Chapel Hill that the Council hereby endorses the Town's grant application to fund an Energy Bank study and energy efficiency and renewable energy projects at Fire Station Number 1, with a commitment of up to \$43,750 in Town funds for the required local match.

This the 12th day of May, 2003.

ATTACHMENT 2

Resolution Appointing the Energy, Environment And Sustainability Committee. The Motion Was Adopted Unanimously (9-0).

A RESOLUTION ESTABLISHING A COUNCIL COMMITTEE TO DISCUSS A CHARGE FOR AN ENERGY, ENVIRONMENT AND SUSTAINABILITY COMMITTEE (2002-04-22/R-18)

WHEREAS, the Council adopted on April 8, 2002, a resolution setting the Council Goals for 2002-2003; and

WHEREAS, one the goals was that the Council appoint a committee of the Council to discuss a charge for an Energy, Environment and Sustainability Committee and to bring forward a proposal for consideration by the Council;

NOW, THEREFORE, BE IT RESOLVED by the Council of the Town of Chapel Hill that the Council hereby appoints the following Council members to the Council Committee to discuss a charge for an Energy, Environment and Sustainability Committee:

Bill Strom, Dorothy Verkerk, and Jim Ward.

BE IT FURTHER RESOLVED that the Council Committee will report its recommendations to the Council at a future Council meeting.

This the 22nd day of April, 2002.

ATTACHMENT 3
Petition for Report on Green Infrastructure Bond

AGENDA #14a(1)

MEMORANDUM

TO: Mayor and Town Council
FROM: The Sustainability, Energy, and Environment (SEE) Committee
(Council Members Strom, Verkerk, and Ward)
SUBJECT: Petition for Report on Green Infrastructure Bond
DATE: April 28, 2003

The Sustainability, Energy, and Environment (SEE) Committee petitions the Town Council to direct the staff to report about the feasibility and financial aspects of a Chapel Hill 2003 **GREEN INFRASTRUCTURE BOND**.

The committee believes the bond could meet several of the top priorities of this council. The bond would include the following:

- Construction costs for 50% of sidewalks listed on the current sidewalk plan within five years.
- Construction costs for 50% of the greenways listed in the Greenway Master Plan within five years.
- Sufficient funds to establish an Energy Bank in the town budget, and for an Energy Coordinator in 2004.
- Upgrades in pedestrian amenities to five intersections
- Open space purchases
- Neighborhood, pedestrian and bicycle safety improvements.

In addition, the SEE Committee would like to have an amortization schedule for the bond. The committee respectfully requests this information to come back to Town Council by the May 28, 2003, Council meeting to allow for a full Council discussion prior to summer recess.

ATTACHMENT 4***Minutes from November 11, 2002 Council Meeting, Excerpts from Latest Comprehensive Annual Financial Report***

November 11, 2002 Regular Meeting:**Item 10—Comprehensive Annual Financial Report and Auditor's Letter**

Finance Director Jim Baker introduced Victor Blackburn, of McGladrey & Pullen, to make the presentation. Mr. Blackburn noted that page three of the financial report presents McGladrey & Pullen's opinion of the accounting practices of the Town of Chapel Hill. He said that the Town had received an "unqualified" opinion for this year's audit, which is the best opinion that an accounting firm can give an organization. Mr. Blackburn noted that they had also done an audit of federal and State funds received by the Town and how the Town used those funds in accordance with grant agreements. McGladrey & Pullen had found "no questionable cause," which he said the Town should be proud of.

Mr. Blackburn pointed out that the Town will be required to adopt GASB No. 34 in the upcoming fiscal year. This will change the format of the financial statements, he said. Mr. Blackburn thanked Mr. Baker and the Chapel Hill Finance Department for their hard work. He noted that Moody had given the Town an AAA bond rating and that Standard and Poors had given it an AA+. This is the highest bond rating that a Town can have, he said, adding that the State's downgrading had not affected the Town. Chapel Hill still has the least amount of interest payments that is required under bond agreements, Mr. Blackburn said.

Mayor Foy praised Mr. Baker and the Finance Department for the excellent work that they do. He commented that the Town consistently gets the highest rating every year. Mr. Baker gave credit to Kay Johnson and her Accounting staff for helping to make this possible.

ATTACHMENT 5**Implementation Summary: Chapel Hill Million Solar Roofs Action Plan****SUMMARY OF MILLION SOLAR ROOFS ACTION PLAN
IMPLEMENTATION RECOMMENDATIONS****AWARENESS AND EDUCATION**

Seek cost-benefit literature from solar equipment manufacturers
 Provide Resource Center at various locations
 Request Parade of Homes tour highlighting solar examples
 Highlight health and productivity benefits of solar technologies
 Provide solar curriculum materials
 Adopt sustainability goals/measures for Chapel Hill
 Establish design contest incorporating solar with affordable housing
 Install solar technologies at highly visible public building

SOLAR INFRASTRUCTURE

Compile list of equipment, companies, contractors, etc.
 Update Town website to include energy efficiency, solar links
 Develop system to maintain/update list of solar projects
 Hire a consultant to compile case studies of solar successes
 Include/highlight solar features in tax valuation records

BUILDING AND DEVELOPMENT REGULATIONS

Examine incentives for projects meeting Energy Efficiency policy
 Consider jointly hiring energy auditor/educator
 Adopt policy requiring applicants to present a life cycle cost analysis

FISCAL POLICY/TAX STRUCTURES/REGULATORY STATUTES

Continue funding of energy efficiency projects in Town budget
 Pursue other funding sources, working with N.C. Solar Center
 Encourage state Utilities Commission to allow net metering

UTILITY/CORPORATE COOPERATION

Form ongoing energy committee
 Press for opportunities for purchase of "green" power

OTHER

Plan presentation to Assembly of Governments
 Present Action Plan to other local governments

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**ENERGY EFFICIENCY
AND RENEWABLE ENERGY IMPROVEMENTS /
TOWN ENERGY BANK PROJECT**

COST PROPOSAL

Submitted May 27, 2003

Proposing Agency: Town of Chapel Hill

**Sustainable Community Development Project
RFP #13-38950**

**State Of North Carolina Department of Administration
State Energy Office**

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COSTS BY PROJECT ELEMENT

Below we summarize projects costs by task, with the proposed source of funding identified in parentheses.

1. Energy bank: \$11,000

- Personnel Costs: \$4,000 (Town – In-Kind)
 - Management of consultant contract through project completion will require approximately 40 hours at \$40 per hour, \$1,600
 - Staff coordination with consultant on Energy Bank plan, 60 hours at \$40 per hour (\$2,400)
- Travel and Subsistence Costs: N/A
- Subcontractor Costs: \$7,000 (\$5,600 – Grant; \$1,400 – Town)
 - The cost of an Energy Bank plan will be included in the energy audit consultant contract described in bullet number 2, below.
- Other Costs: N/A

2. Energy audit of Fire Station Number 1, Inter-Faith Council Shelter and Post Office/Courthouse: \$11,600

- Personnel Costs: \$1,600 (Town – In-Kind)
 - Staff coordination and planning with energy audit consultant, 40 hours, at \$40 an hour
- Travel and Subsistence Costs: N/A
- Subcontractor Costs: \$10,000 (\$8,000 – Grant, \$2,000 – Town)
 - We estimate an energy audit for the three buildings would require approximately 100 hours, assuming a \$100 an hour rate.
- Other Costs: N/A

3. Energy efficiency improvements at Fire Station Number 1: \$42,000

- Personnel Costs: \$2,000 (Town – In-Kind)
 - Project management, 50 hours, at \$40 an hour
- Travel and Subsistence Costs: N/A
- Subcontractor Costs: \$40,000 (\$32,000 – Grant; \$8,000 – Town)
 - We anticipate the energy audit would identify at least \$40,000 in energy efficiency projects at the fire station. For example Sioux Center, Iowa, spent \$30,000 at a 20-year-old fire station in an energy efficiency upgrade that included new roof insulation, new insulated doors, and a new heating system.
- Other Costs: N/A

4. Energy efficiency improvements at the Inter-Faith Council Shelter and the Post Office/Courthouse: \$94,000

- Personnel Costs: \$4,000 (Town – In-Kind)
 - Project management, 100 hours, at \$40 an hour.
- Travel and Subsistence Costs: N/A

- Subcontractor Costs: (\$72,000 – Grant; \$18,000 – Town)
 - Labor, equipment and materials costs. The energy audit would recommend the specific energy efficiency projects at both sites.
 - Other Costs: N/A
5. **Solar hot water panel installation: \$7,000**
- Personnel Costs: N/A
 - Travel and Subsistence Costs: N/A
 - Subcontractor Costs: \$7,000 (\$5,600 – Grant; \$1,400 – Town)
 - Labor and equipment costs for 3 solar hot water panels, including a photovoltaic-powered pump
 - Other Costs: N/A
6. **The installation of photovoltaic panels: \$40,000**
- Personnel Costs: N/A
 - Travel and Subsistence Costs: N/A
 - Subcontractor Costs: \$40,000 (\$32,000 – Grant; \$8,000 – Town)
 - Labor and equipment costs estimated at \$10,000 per kilowatt
 - Other Costs: N/A
7. **Xeriscaping: \$14,500**
- Personnel Costs: N/A
 - Travel and Subsistence Costs: N/A
 - Subcontractor Costs: \$14,500 (\$11,600 – Grant; \$2,900 – Town)
 - Plants and installation, \$11,000
 - Landscape design, \$3,500
 - Other Costs: N/A
8. **Public awareness: \$11,000**
- Personnel Costs: \$1,250 (Town – In-Kind)
 - Staff time – management of virtual tour, sign contracts, \$30 an hour, 35 hours (\$1,000)
 - Web site development by staff (\$250)
 - Travel and Subsistence Costs: N/A
 - Subcontractor Costs: \$9,750 (\$8,000 – Grant; \$1,750 – Town)
 - Signage contracts, \$4,000
 - Brochures, \$2,500
 - Advertising of events, \$2,250
 - Virtual tours of sites for website, \$1,000
 - Other Costs: N/A
- General Expenses: \$3,600**
- Processing of Grant / Accounting: \$1,200 (Town – In-Kind)
 - Total Hours: 30
 - Rate: \$40 per hour

- Contract monitoring: \$2,400 (Town – In-Kind)
 - Total Hours: 60
 - Rate: \$40 per hour

Other Costs (e.g. office expenses): \$300

- Office supplies: \$200 (Town)
- Advertising costs (RFP): \$100 (Town)

TOTAL COST: Not to Exceed \$235,000

SUMMARY: Project Costs by Funding Source

Element	Total Cost	Grant	Town	In-Kind (Town)	Total: Town
1. Energy Bank	11,000	5,600	1,400	4,000	5,400
2. Energy Audits	11,600	8,000	2,000	1,600	3,600
3. Energy Efficiency Improvements - Fire Station	42,000	32,000	8,000	2,000	10,000
4. Energy Efficiency Improvements - IFC Shelter, Post Office/Courthouse	94,000	72,000	18,000	4,000	22,000
5. Solar Hot Water Panels	7,000	5,600	1,400		1,400
6. Photovoltaic Panels	40,000	32,000	8,000		8,000
7. Xeriscaping	14,500	11,600	2,900		2,900
8. Public Awareness	11,000	8,000	1,750	1,250	3,000
General	3,600			3,600	3,600
Other Costs	300		300		300
TOTAL	235,000	174,800	43,750	16,450	60,200

PROPOSED FUNDING

- **Sustainable Community Development Project Grant: \$174,800**
- **Town Match:**
 - \$43,750 - Cash
 - \$16,200 – In-Kind
- **Town Match as Percentage of Grant: 34.5 percent**