

October 1991

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**SUMMARY AND ABSTRACTS**

**Applied Research Units and Projects  
1992 Program**

**Energy Task Force  
of the Urban Consortium**

Prepared by

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**PUBLIC  
TECHNOLOGY,  
INC.**

1301 Pennsylvania Ave. NW  
Washington, DC 20004-179  
202.626.2400  
800.852.4934  
FAX 202.626.2498

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## OVERVIEW

The Urban Consortium is a special PTI network of over forty of the largest cities and urban counties by population in the United States. The Consortium provides a unique forum to define urban problems common to its member governments and to develop, apply, transfer and commercialize technologies and innovative management techniques to address those problems. Public Technology, Inc. (PTI) is the nonprofit, research, development, and commercialization arm of the National League of Cities, National Association of Counties and the International City/County Management Association, and an association of local governments.

With staff, management and business services provided by Public Technology, Inc., the Urban Consortium carries out its work through special projects and Task Forces that focus on specific functional areas of local government management. The Urban Consortium Energy Task Force (UCETF) is the nation's most extensive cooperative local government program to improve energy management and technology applications in cities and urban counties. Its membership is composed of local government officials from twenty of America's largest urban centers.

Proposals to meet the specific objectives of the UCETF annual work program are solicited from major urban jurisdictions. Projects based on these proposals are then selected by the Energy Task Force for direct conduct and management by staff of city and county governments. Projects selected for each year's program are organized in thematic units to assure effective management and ongoing peer-to-peer experience exchange, with results documented at the end of each program year.

### Specific R&D Priorities

Developed to meet both the defined needs of cities and counties as well as national priorities such as those in USDOE's proposed National Energy Strategy, major topics within the 1992 program are: (1) Transportation; (2) Energy, Environment, Economic and Social Development; and (3) Energy Efficient Facilities.

### Partnership and Development

The UCETF has well established partnerships with USDOE and among its city and county members. Effective partnerships with energy utilities and other organizations began for 1988-89 projects for alternative vehicle fuels, electricity management, waste management and sustainable communities. Major efforts have been placed on the expansion of these partnerships with private industry, community organizations, state governments and academia.

### Visibility and Transfer

The UCETF has a solid record of accomplishments. These successful projects are transferred to other cities and counties through specifically designed projects, print and electronic media and a series of workshops and conferences. A Technology Transfer Committee has been established to improve and build a marketing program.

This Summary contains short descriptions of the projects and participants in the 1992 UCETF program. Additional information about this program and other projects of the UCETF is available from:

Mike Lindberg, Chair  
Commissioner of Public Affairs  
1220 S.W. 5th Avenue, Suite 414  
Portland, OR 97204  
503/823-4145

Jack F. Werner, Jr.  
Public Technology, Inc.  
1301 Pennsylvania Avenue, NW  
Washington, DC 20004  
202/626-2400

## ENERGY, ENVIRONMENT, ECONOMIC and SOCIAL DEVELOPMENT UNIT

### Research Objectives

"Sustainability" is a planning goal to provide an integrative systems approach to meeting all our needs for today and tomorrow. Evaluating the needs of citizens and developing effective and efficient ways to meet those needs is a primary responsibility of local governments. Cities and counties are currently beset by a wide range of problems that in fact are symptoms of some common and pervasive ills. Our problems with energy, environment, economic and social development did not develop independently of one another, but are related in a complex and interdependent way. Similarly, these problems cannot be effectively solved through a piecemeal approach without recognizing and addressing the interdependent relationships between these areas.

It is especially critical, as our nation's resources are being quickly depleted, that citizens, the private sector, and federal, state, and local governments make a commitment to integrated resource planning that will optimize our use of resources and minimize our reliance on non-renewable and environmentally unsafe practices.

### Projects and Principal Jurisdiction

Projects and the principal jurisdiction involved with this program are listed below. Summaries of each project, key participants and partners follow.

#### 1992 Projects

Dade County	A Long Term Urban Carbon Dioxide Emission Reduction Program
Pima County	Sustainable Community Implementation Partnerships
Portland	Sustainable Business Development Program
San Jose	Negotiating a Demand Side Bid: The City of San Jose Case Study
San Jose	"Green Aisle" Research Program
Santa Clara	Fuel Cell Demonstration Partnership Program
Austin	Sustainable Building Sourcebook
Chicago	Downtown District Cooling: A 21st Century Approach
Chicago	Role of Municipal Governments in the Design and Implementation of Energy Efficiency Codes and Standards Designed to Capture Lost Efficiency Opportunities
Seattle	Coordination of Energy and Air Quality (CEAM)
St. Louis	Earthways Home Project: An Educational Center for Sustainable Urban Development
Tucson	Minority Marketing for Resource Conservation
Washington, DC	Energy Auditor Training Course for High School Students

## **PROJECT SUMMARIES, PARTICIPANTS AND PARTNERS**

### **A Long Term Urban Carbon Dioxide Emission Reduction Program -- [Multi-year] Dade County, Florida**

#### **Abstract:**

Dade County is one of 12 international urban jurisdictions selected to participate in the Urban CO<sub>2</sub> Project sponsored by the ICLEI. Under this program, plans will be developed to reduce overall carbon dioxide emissions by 1% to 2% per year over a ten year implementation period. Each urban area will partner with another urban area to directly transfer those strategies which are found to be effective. The plans will focus on transportation, land use, energy (including building standards and life cycle costing), and solid waste management as the areas most likely to yield positive results. The ultimate objective is to slow global warming by using the tools most readily available to local governments. Technology and experience transfer through education are key elements of the strategy which explicitly recognizes that this global problem must eventually be resolved locally. Dade County is the only subtropical urban area included in the project and will serve as a potential model for other coastal metropolitan areas.

#### **Participants and Partners:**

This project will be managed and documented by the department of Environmental Resources Management. Partners include the International Council for Local Environmental Initiatives, the Dade County School Board, universities and business organizations, and various individuals with expertise in the area of energy and environmental issues.

**Project Director:** Douglas Yoder, Assistant Director

**Project Manager:**

Environ. Resources Management Dep't.  
111 NW 1st Street  
1310 Metro Dade Center  
Miami, FL 33128  
305-375-3376

### **Sustainable Community Implementation Partnerships {Continuation} Pima County, Arizona**

#### **Abstract:**

This proposal builds on a successful UCETF project. The Tucson Solar village Project completed the urban planning, design, re-zoning, and development plan for a sustainable community of 5000 persons on 820 acres of state owned land. The objective is to integrate with other ETF projects, and transfer viable implementation mechanisms for sustainable community development to other jurisdictions.

#### **Participants and Partners:**

The management and documentation of this project will be by the staff of the County Manager's Office. Partners of this project include the National Association of Home builders and NRC, Technical Consultants from the Labs and Universities, Local Builders, and Developers.

**Project Director:** Gwyn Sanders  
**Project Manager:** Wilson W. Orr  
 County Manager's Office  
 130 West Congress - 11th Floor  
 Tucson, AZ 85701-1317  
 602/791-5414

**Sustainable Business Development Program -- (Multi-Year)  
 Portland, Oregon**

**Abstract:**

The goal of this program is to cultivate successful private businesses and at the same time use energy and water efficiently, decrease solid waste, and reduce air pollution and greenhouse gases. This proposal is a Public Enterprise project that will be self-funded by the third program year.

**Participants and Partners:**

The project will be managed and documented by the City's Energy Office. Partners are Portland General Electric, the Oregon Department of Energy, the Portland Development Commission, and the Northwest Power Planning Council. Portland General Electric, Pacific Power and Light, Northwest Natural Gas and the Oregon Department of Energy each have extensive financial and technical assistance programs that they will make available to participants of this program.

**Project Director:** Susan Anderson, Energy Office Director  
**Project Manager:**

Portland Energy Office  
 1120 SW Fifth Avenue, Room 1030  
 Portland, OR 97204  
 503/796-7222

**Negotiating a Demand Side Bid: The City of San Jose Case Study  
 San Jose, California**

**Abstract:**

"Demand Side Bidding" is a relatively new means by which utilities secure "new" sources of energy through energy demand management. The City of San Jose's Energy Management Program will research, prepare, submit and negotiate a Demand Side Proposal in response to a utility RFP for conserved energy. This project will document a case study of how a municipality responded to a request from a utility for conserved energy. A key aspect of the project is to research how the City could "co-negotiate" its proposal with San Jose businesses in order for the community to maximize its share of benefits from the PG&E program.

**Participants and Partners:**

The project will be managed and documented by the Office of Environmental Management. Partners include California Energy Commission which will assist financially, PG&E, other key organizations will be involved via the establishment of the Advisory Committee.

**Project Director:** Gary B. Liss  
**Project Manager:** Cesar Dablo  
 Office of Environmental Management  
 777 North First Street, Suite 450  
 San Jose, CA 95112  
 408/277-5533

**"Green Aisle" Research Program -- [Multi-year]  
 San Jose, California**

**Abstract:**

The goal of this project is to maximize public use and broad industry production and distribution of energy efficient and environmentally conservative products. A cornerstone of this project will be the combination of business/consumer awareness and education on energy efficiency and environmentally benign products.

**Participants and Partners:**

This project will be managed and documented by the Office of Environmental Management. Participants include San Jose University's Center for the Development of Recycling. Others include Green Cross, a division of Scientific Certification System, Inc.

**Project Director:** Gary B. Liss  
**Project Manager:** Mary Tucker  
 Office of Environmental Management  
 777 North First Street, Suite 450  
 San Jose, CA 95112  
 408/277-5533

**Fuel Cell Demonstration Partnership Program -- [Multi-year]  
 Santa Clara, California**

**Abstract:**

This project is to represent one task in the demonstration of a 2-MW fuel cell power plant. This demonstration is the first step in an overall multi-million dollar initiative to commercialize fuel cells. Fuel cells offer major energy, environmental, economic and social benefits to urban areas requiring new energy services. This project will provide a means for other urban governments to share experiences and approaches from the first 2-MW carbonate fuel cell demonstration in the world.

**Participants and Partners:**

This project will be managed and documented by the staff of the department of Electric Utility. Partners include Electric Power Research Institute, LA Department of Water and Power, Sacramento Municipal Utility District, Natural Rural Electric Cooperative Association, Pacific Gas & Electric, Southern California Edison, Southern California Gas. Participation will be either in-kind, technical support or financial contribution.

**Project Director:** Paul H. Eichenberger, Assistant Director of Electric Utility  
**Project Manager:**  
 Electric Department  
 1500 Warburton Avenue  
 Santa Clara, CA 95050  
 408/984-3044



**Sustainable Building Sourcebook  
Austin, Texas**

**Abstract:**

This project addresses the need for prospective homeowners and builders to have access to the materials and assistance to build and inhabit environmentally sound and safe (earth friendly) homes. The project is designed to provide building professionals and prospective homeowners the technical information and specific products related to sustainable building. The "how to" information in the Sourcebook will enable architects and builders to understand the technical processes, regulatory status (and procedures for working through the regulatory process), and sources of consultation and assistance for Eco-home construction. The sustainable products listings in the Sourcebook will give the sources as well as background information regarding the inclusion or exclusion of selected products.

**Participants and Partners:**

The Environmental and Conservation Services Department will be the principle managing agency for this project. The project will be in partnership with the Center for Maximum Potential Building Systems, Inc.

**Project Director:** Michael S. Myers  
**Project Manager:** Doug Seiter  
Environ. & Conservation Services Division  
206 East 9th Street, Suite 17.102  
Austin, Texas 78701  
512/499-3500

**Downtown District Cooling: A 21st Century Approach  
Chicago, Illinois**

**Abstract:**

The purpose of this project is to develop a marketing and business plan for a downtown district energy system in partnership with the local natural gas utility company and a major owner/operator of district heating and cooling systems (People Gas Light and Coke Company and, Trigen Energy Corporation, respectively). This project is an outgrowth of Chicago's 1989 UCETF Project, "Central Station DHC Feasibility".

**Participants and Partners:**

Chicago's departments of Planning, Public Works, and General Services will document and manage this project. Trigen Energy Corporation will interview/survey potential customers for development of business plan and also examine the tunnels needed to connect to potential customers. Peoples Gas will assist Trigen in the above efforts and also give technical support.

**Project Director:** Charlie Williams, Director of Energy Management  
**Project Manager:** Dwight Bailey  
Department of Planning  
121 No. LaSalle Street  
Chicago, IL 60602  
312/744-7224

**The Role of Municipal Governments in the Design and Implementation of Energy Efficiency Codes and Standards  
Chicago, Illinois**

**Abstract:**

This project will identify, evaluate and test those factors unique to municipal government which impact the development and implementation of state-wide energy efficiency codes and standards. The product will be a case study report on the role of a home rule municipality in a state-wide collaborative effort to develop codes and standards.

**Participants and Partners:**

Management and documentation of this project will be by the Department of Planning. Partners include Illinois commerce Commission staff, Department of Energy and Natural Resources, electric and gas utilities, builder organizations, municipal governments, consumer groups and equipment manufacturers.

**Project Director:** Charlie Williams, Director of Energy Management  
**Project Manager:** Robert Romo  
 Department of Planning  
 121 No. LaSalle Street  
 Chicago, IL 60602  
 312/744-7224

**Coordination of Energy and Air Quality (CEAM) {Continuation}  
Seattle, Washington**

**Abstract:**

The goal of this project is to demonstrate that industrial plants can simultaneously improve air quality and improve electric efficiency through installation of new electric technologies. CEAM will be an investigation of ways that an electric utility, Seattle City Light (SCL), and a regional air quality board, the Puget Sound Air Pollution Control Agency (PSAPCA), can jointly search for more energy efficient ways to control air pollution in industries.

**Participants and Partners:**

The management and documentation of this project will be by the staff of the Seattle City Light Department. Partners include Puget Sound Air Pollution control Agency. This agency will contribute staff time, primarily in the form of meetings and telephone consultation.

**Project Director:** Marya Castellano  
**Project Manager:** Tim M. Newcomb  
 Seattle City Light Department  
 1015 - 3rd Avenue, Room 818  
 Seattle, WA 98104  
 206/684-3296

**Earthways Home Project: An Educational Center for Sustainable Urban Development**  
**-- [Multi-year]**  
**St. Louis, Missouri**

**Abstract:**

The EarthWays Home will be a model energy-efficient environmental house. Schools, community groups, city and county development agencies, builders and businesses will use it as an educational resource and informational referral center through daily tours and special events. It will showcase available research, technology, products, and systems in an understandable format. A tour of the home will exhibit specific steps in technological advances and lifestyle changes that can save between 50% and 80% in energy and resource consumption.

**Participants and Partners:**

Management and documentation will be by EarthWays, an environmental non-profit organization. Partners and cost-sharing participants include environmental groups, broad based established not-for-profits, governments, private foundations, educational organizations, corporations, local manufacturers, local utilities, private donors and neighborhood associations.

**Project Director:** Charles P. Kindleberger, Acting Director  
**Project Manager:** Mary J. Dodge  
 Community Development Agency  
 330 North Fifteenth Street  
 St. Louis, MO 63103  
 314/622-3400

**Minority Marketing for Resource Conservation -- [Multi-year]**  
**Tucson, Arizona**

**Abstract:**

This project will address a need for specific outreach from Community Energy and Environmental Programs into the minority communities of urban areas. The project proposes to research new, targeted methods of outreach, and to demonstrate the new methods through the implementation of specific, targeted pilot programs. Participation of all sectors of the population in programs which assure and enhance the sustainability of the community and its energy and environmental resources is critical to the success of that community. This need for participation calls for the specific targeting of minority issues and concerns as they relate to resource conservation, and the development of targeted marketing of resource conservation programs toward those groups.

**Participants and Partners:**

This project will be documented and managed by the City of Tucson Office of Energy and Environment. The primary non-governmental partner in this project is the Chicanos Por La Causa organization. CPLC provide incomparable expertise and community linkages in meeting the goals of the project.

**Project Director:** Karen Heidel, Environmental Resource Manager  
**Project Manager:**  
 Energy & Environment  
 P. O. Box 27210  
 Tucson, AZ 85726-7210  
 602/791-5414

**Energy Auditor Training Course for High School Students -- [Multi-year]  
Washington, District of Columbia**

**Abstract:**

An energy audit is a process which identifies and specifies the energy cost savings which are likely to be realized through the purchase and installation of particular energy conservation measures or renewable-resource energy measures. The energy auditor training course is designed to instruct high school students on the most effective ways of conducting energy audits.

**Participants and Partners:**

Management and documentation will be by the Office of Public Education and Information Programs. The principal partner is the D.C. Public School System.

**Project Director:** Sharon Y. Cooke, Chief, Public Education & Information Programs

**Project Manager:**

D.C. Energy Office  
613 G Street, NW, Suite 500  
Washington, DC 20001  
202/727-1800

## **ENERGY EFFICIENT FACILITIES UNIT**

### **Research Objectives**

Activities involving energy efficient facilities are part of a national effort to achieve maximum cost-effective energy productivity in the building sector. There exists a need for collaboration between local government officials responsible for energy and environment programs and other local government official responsible for facilities, as well as the Federal officials; this effort goes hand-in-hand with working with private sector groups. In addition, the marshaling of financial and other resources to meet the needs of more energy efficient facilities is essential. New technologies and management/administration practices to advance energy efficiency in facilities require major partnership efforts and transfer programs. Multi-family housing that has a large concentration of low-income families presents a unique challenge to lowering energy costs and maintaining energy efficient facilities.

Both existing building stock and near-term new construction need to be made much more energy efficient if we are to meet local, state, and national objectives related to energy security, energy supply, and energy affordability. There are many ways to approach improving energy efficiency in all types of people intensive buildings. **This category of buildings includes housing (public and private) and city-owned or subsidized facilities.** Space heating and cooling, lighting, water heating, refrigeration, cooking, ventilation, building envelope, energy efficient codes implementation, operation and maintenance (O&M), education, etc. are areas where opportunities exist to improve energy efficiency. Priority consideration needs to be given to applied research projects that develop methods for using both new and proven technologies appropriate to low-income building stock (single family and multi-family, owned and rented, public and private) to increase energy efficiency.

### **Projects and Principal Jurisdiction**

Projects and the principal jurisdiction involved with this program are listed below. Summaries of each project, key participants and partners follow.

#### **1992 Projects**

Boston	Energy Efficiency Outreach Partnership
Columbus	Integrating Operations and Maintenance (O&M) for Energy Efficiency with O&M for Improving Indoor Air Quality
Hennepin County	Integrated Rehab and Weatherization Program for Low Income Suburban Homeowners
Memphis	Upgrade Energy Building Standards and Develop Rating System for Existing Low-Income Housing
New Orleans	Utilization of energy Efficiency to Support Homeownership Affordability
Detroit	Energy Optimization of Water distribution system
Montgomery County	CFC Maintenance and Conversions in Chillers: The Commercial Building Response to the 1990 Clean Air Act
New York City	Development of an Energy Services Corporation
Phoenix	Solar Cooling Demonstration Project
San Francisco	Energy Management Action Plan (EMAP)

## **PROJECT SUMMARIES, PARTICIPANTS AND PARTNERS**

### **Energy Efficiency Outreach Partnership {Continuation} Boston, Massachusetts**

#### **Abstract:**

This project is to enhance Boston Edison's ability to target their Energy Fitness program which has been going on for a year, to low income and elderly households and assist the city to participate in Boston Edison's Demand Side Management programs. Electricity reduction projects involving residential customers, municipal buildings and commercial customers are being implemented in targeted neighborhoods as well as city-wide. Working together, Boston Edison and the City will assist 25,500 (predominantly low income and elderly) households to reduce their electric bills, assess and retrofit 150 small municipal buildings and schools, address the energy needs of the City's larger buildings, reduce the electricity consumption of the City's street lights and work with neighborhood businesses to identify energy saving opportunities.

#### **Participants and Partners:**

This project will be administered and documented by the Mayor's Policy Office. Boston Edison is the principal partner, providing energy efficiency services at no cost to the users including residential customers, commercial users and the City itself. Other partners include the City Departments involved in municipal building maintenance and improvement.

**Project Director:** Tom Hanley  
**Project Manager:** Doug Housman  
Mayor's Office  
Room 608 City Hall  
Boston, MA 02201  
617/725-3398

### **Integrating Operations and Maintenance (O&M) for Energy Efficiency with O&M for Improving Indoor Air Quality {Continuation} Columbus, Ohio**

#### **Abstract:**

This project will institutionalize indoor air quality management within the energy management function of the City of Columbus. The results of the IAQ/Energy program will be transferred to other cities.

#### **Participants and Partners:**

The OMB/Facilities Management Division will document and manage this project. The Division of Facilities Management will contribute matching in-kind staff. Other partners are the State of Ohio Safety and Hygiene Division, Columbus Health Department, and other interested public and private organizations.

**Project Director:** Joseph Ventresca, Energy Coordinator  
**Project Manager:**  
OMB/Facilities Management Division  
90 W Broad Street, Room 29  
Columbus, OH 43212  
614/645-8679

**Integrated Rehab and Weatherization Program for Low Income Suburban Homeowners -- [Multi-year]  
Hennepin County, Minnesota**

**Abstract:**

The purpose of this project is to create the necessary administration support to coordinate programs which are geared towards the rehabilitation of low-income suburban homes.

**Participants and Partners:**

This project will be managed by the Development Planning Unit of the County's Office of Planning and Development. The local gas and electric utilities will be involved as financial contributors and technical consultants.

**Project Director:** Robert Isaacson  
**Project Manager:**

A-2308 Hennepin County Government Center  
300 South 6th Street  
Minneapolis, MN 55487

**Upgrade Energy Building Standards and Develop Rating System for Existing Low-Income Housing  
Memphis, Tennessee**

**Abstract:**

This project seeks to establish a cooperative effort between a consortium of state and local agencies to address energy conservation in low-income housing. Specific project initiatives include upgraded residential energy conservation standards to be adopted by HCD; guaranteed maximum utility bills for newly constructed, low-income housing; development of an energy efficiency rating system for new and existing homes; and a residential energy conservation training curriculum to be taught to low-income residents participating in the assistance programs.

**Participants and Partners:**

The Memphis and Shelby County Office of Economic and Resource Development will be the coordinating agency for this project. The Energy Management Section will provide the primary staff to manage and document this project. Partners include Memphis Light, Gas and Water; Memphis Housing and Community Development, Tennessee Home Builders Association, and the Tennessee Energy Division

**Project Director:** Dexter Muller, Director  
**Project Manager:** Cliff Norville

Planning and Development  
125 N. Mid-America Mall, Room 468  
Memphis, TN 38103  
901/576-7197

**Utilization of Energy Efficiency to Support Homeownership Affordability -- [Multi-Year]  
New Orleans, Louisiana**

**Abstract:**

The objective of this project is to create greater financial stability for the low-income homeowner by decreasing the energy costs usually incurred by that homeowner.

**Participants and Partners:**

The Office of Housing and Urban Affairs will manage and document this project. New Orleans Public Service, Inc. will perform energy audits, provide technical assistance, provide statistics generated during project implementation and assist in the purchase and installation of energy efficient equipment. The Neighborhood Development Foundation will provide education assistance to participants who are either new homeowners or who are scheduled for home-ownership. The Housing Authority of New Orleans will assist in identifying homesites for this project.

**Project Director:** George Nassar  
**Project Manager:** Barry Walton  
Office of Housing & Urban Affairs  
2400 Canal Street, 5th Floor  
New Orleans, LA 70119  
504/826-1615

**Energy Optimization of Water Distribution System -- [Multi-year]  
Detroit, Michigan**

**Abstract:**

The objective of this proposal is to develop a computer program which will simulate various pumping and distribution routing scenarios with the objective of minimizing power consumption while maintaining satisfactory pressure and flow distribution for water demand and fire protection. This study will develop an integrated energy strategy and planning guidelines to be incorporated in the computer software and hardware design for the supervisory control and data acquisition (SCADA) system now under design by DWSD. Upon completion of the the system, SCADA will generate operation statistics for the entire system and will be capable of remotely monitoring, operating, and controlling all booster stations and control devices.

**Participants and Partners:**

Detroit Water and Sewage Department will document and manage this project. Detroit Edison and other communities are participants and partners in this project.

**Project Director:** Albert Thomas, Assistant Director  
**Project Manager:** Joseph McGuire  
Buildings & Safety Engineering Department  
Room 401 City-County Building  
Detroit, MI 49226  
313/224-3252



**CFC Maintenance and Conversions in Chillers: The Commercial Building Response to the 1990 Clean Air Act Amendments -- [Multi-year]  
Montgomery County, Maryland**

**Abstract:**

This is a multi-year project. During the first year, Montgomery County will develop a management plan for chiller refrigerant maintenance (limiting release of CFCs and HCFs into the environment) and for chiller conversion. While various parts of the air-conditioning industry have made tremendous progress in establishing codes of practice for equipment owners, no unbiased source is available to guide local governments and other owners in making the tough economic decisions involved in retrofitting or replacing current chillers. This project will bring together the unparalleled expertise of the National Institute of Standards and Technology (NIST, formerly the National Bureau of Standards) with Montgomery County's day-to-day operating experience with implementing new technologies in local government buildings. The result will be a plan of action for building owners that has national prestige and credibility along with clear, down-to-earth guidance necessary for actual operational decision making.

**Participants and Partners:**

The Energy Engineer for Montgomery County will manage and prepare all reports. Partners include Carrier Corporation, the Gas Cooling Center, the Maryland Energy Administration, and the National Academy's Public Facilities Council.

**Project Director:** Paul Tseng, Chief  
**Project Manager:** Dale Stanton-Hoyle/Ron Balon  
Department of Facilities & Services  
110 N. Washington Street, Room 329  
Rockville, MD 20850  
301/217-6100

**Development of an Energy Services Corporation  
New York City, New York**

**Abstract:**

Based on focus group surveys, initial first capital cost was the most frequently cited deterrent to the installation of energy-efficient measures. This project will develop a business plan for establishing a municipal Energy Services Corporation (ESC). The ESC will assist owners and developers of new and renovated construction projects in financing the incremental cost associated with energy-efficient buildings and facilities. A case study will be incorporated as a learning device and test run.

**Participants and Partners:**

The project will be directed and conducted by the City of New York's Department of Telecommunications and Energy. Partners include Cornell University Cooperative Extension, New York State Energy Office, Office of the Deputy Mayor for Finance and Economic Development, and the Economic Development Corporation

**Project Director:** Chris Ward  
**Project Manager:** Laura E. Tandy  
Department of Telecom. & Energy  
75 Park Place, 6th Floor  
New York, NY 10017  
212/788-6546

**Solar Cooling Demonstration Project  
Phoenix, Arizona**

**Abstract:**

This demonstration project will consist of a solar cooling system which will provide facility cooling through a combination of solar heating and absorption refrigeration. Solar energy will be utilized to provide the hot water to operate the absorption chiller. With sunshine available on a daily basis throughout the cooling season in the southwest, solar cooling is a viable alternative to mechanical refrigeration. The proposed system will operate without the use of CFCs, thus eliminating their harmful environmental impact. The targeted facility will be of approximately 20 ton capacity for the purpose of this demonstration project.

**Participants and Partners:**

The project will be managed and documented by the Office of Energy Conservation. Partners are the City of Phoenix, and the Arizona State University.

**Project Director:** Darshan S. Teji, Energy Conservation Administrator  
**Project Manager:** Dimitrios Laloudakis  
 Public Works Department  
 2631 South 22nd Avenue  
 Phoenix, AZ 85009  
 602/262-7897

**Energy Management Action Plan (EMAP)  
San Francisco, California**

**Abstract:**

Based on the "Sustainable Cities Projects", this project is designed to institutionalize energy conservation into all aspects of a department's operations, yielding maximum results in the long run.

**Participants and Partners:**

Day to day management and documentation will be conducted within the City's Public Utilities Commission Bureau of Energy Conservation. Rec/Park has provided much of the inspiration for the development of this project. Hetch Hetchy Water & Power, California Energy Commission, The Cities of Berkeley and Palo Alto and the Association of California Energy Officials are all partners of this project.

**Project Director:** John F. Deakin, Director  
**Project Manager:**  
 PUC/Bureau of Energy Conservation  
 110 McAllister Street, Room 402  
 San Francisco, CA 94102  
 415/864-6915

## ***SURFACE TRANSPORTATION***

### **Research Objectives**

It is frequently said that the goal of transportation strategies should be moving people, not vehicles. But in the day and age of satellite networks, cellular phones, and personal computers, we can redefine transportation as **access to goods, services, and information to meet the needs of local governments and their citizens.**

The focus of this program in the past has been alternative transportation fuels. ATFs are still a major piece in a very large and complex puzzle facing local governments that includes wide-reaching concerns about transportation. There are many factors related to transportation that affect local governments: increasing congestion, crumbling infrastructure of roads and bridges, unchecked urban/suburban sprawl, and the increased "paving over" of our communities that leads to urban heat islands. Federal, state, and urban governments each share in the responsibility and must play a role in providing a sustainable and multi-faceted transportation system that is based on comprehensive and integrated planning at all levels.

### **Projects and Principal Jurisdiction**

#### **1992 Projects**

Houston	Public/Private Partnership to Identify Barriers & Provide Solutions to Implement Large Scale Fleet Natural Gas Vehicle Utilization in Ozone Nonattainment Areas
New York City	Energy and Economic Implications of Transportation Demand Management Strategies
Pittsburgh	Natural Gas Infrastructure Development
Seattle	Telecommuting for City Employees
Albuquerque	A Fully Integrated Multi-Fuels Service Stations
Denver	Technical Comparison Between Hythane (H <sub>2</sub> /CNG) and CNG Fueled Vehicles
Las Vegas	Reduction of Diesel Exhaust Emissions in Urban Mass Transit Vehicles with Alcohol Injection Systems
San Diego City	California Clean Air Act - A Compliance Strategy for the City of San Diego's Non-Emergency Fleet

**Public/Private Partnership to Identify Barriers and Provide Solutions to Implement Large Scale Fleet NGV Utilization in Ozone Nonattainment Areas  
Houston, Texas**

**Abstract:**

This project is a continuation of Houston's 1991 project. The project will build on previous vehicle fuels research as well as the preliminary conclusions from the City's CNG fueled vehicle comparison. The project will identify the barriers and provide solutions to implement large scale fleet natural gas vehicle utilization in ozone nonattainment areas. The project will further define the most effective vehicle market niche for compressed natural gas or other natural gas options through a public/private partnership arrangement which has been developed in the Houston region. The city is proposing to work with a consortium of interested private organizations to jointly identify and address the obstacles to achieve common goals of large scale fleet natural gas vehicle utilization in Houston.

**Participants and Partners:**

This project will be managed and documented by the staff of Houston's department of Finance and Administration. Partners include Entex, Enron, Natural Fuels Corporation, Stewart and Stevenson, Public Utilities Department, Health and Human Services Department and others.

**Project Director:** Dewayne Huckabay, Assistant Director  
**Project Manager:** Ralph Egbuonu  
 Finance and Administration  
 500 Jefferson, Suite 1800  
 Houston, TX 77002  
 713/658-4517

**Energy and Economic Implications of Transportation Demand Management Strategies  
New York City, New York**

**Abstract:**

This project is a part of a nationwide effort to incorporate energy and economic analyses into local governmental transportation and clean air planning. The project will examine an array of transportation demand management measures for their energy and economic impact. The results of the project will include a spreadsheet model and a workbook to be used as a tool for calculating energy savings from transportation demand management measures, a final report, and a national conference on energy, environment, and transportation demand management.

**Participants and Partners:**

New York City's Department of Telecommunication and Energy will manage and document this project. Partners and participants are: New York Telephone -- will be instrumental in developing the telecommuting portion of this project; Union of Concerned Scientists -- will collaborate with DTE in developing the workbook on energy savings; National Association of Fleet Administrators will provide a link to private fleet management.

**Project Director:** Chris Ward  
**Project Manager:** Matthew Brown  
 NYC Department of Telecom. & Energy  
 75 Park Place, 6th Floor  
 New York, NY 10007  
 212/788-6546

**Natural Gas Infrastructure Development -- [Multi-year]  
Pittsburgh, Pennsylvania**

**Abstract:**

The City of Pittsburgh is currently involved with Equitable Gas Company in an alternative fuel program using natural gas vehicles. The city's intent to expand the program has been hampered by the lack of a local vendor for vehicle conversions and lack of refueling sites for such vehicles. As an urban area with a variety of fleets, the City would like to market natural gas as an acceptable alternative fuel for all fleets. The City would therefore attempt to establish both local conversion sites as well as a refueling infrastructure for natural gas vehicles. The City will undertake to determine what role a local government can perform in either providing or coordinating the conversion and refueling services.

**Participants and Partners:**

The project will be managed and documented by the Department of General Services. Partners include: Equitable Gas Company which provides technical advice.

**Project Director:** Scott Kunka, Fleet Operations Manager  
**Project Manager:** Jerome Ferrance  
Department of General Services  
414 Grant Street, Room 526 City/County Building  
Pittsburgh, PA 15219  
412/255-2770

**Telecommuting for City Employees -- [Multi-year]  
Seattle, Washington**

**Abstract:**

This project will identify and evaluate the issues related to Seattle City Light employee telecommuting. This information will be used to develop a plan for implementing a telecommuting program designed for the City of Seattle workforce.

**Participants and Partners:**

Office for Long range planning will manage and document this project. Partners include: Washington State Department of Energy, Metro, Washington State Transportation Center, and Puget Sound Air Pollution Control Agency. All these agencies will provide technical assistance, and help to evaluate the project.

**Project Director:** Henry Sharpe, Manager  
**Project Manager:** Ron Lewis  
Office for Long-range Planning  
Env. & Transportation Planning  
600 4th Avenue, Room 200  
Seattle, WA 98104  
206/684-8056

**A Fully Integrated Multi-Fuels Service Station  
Albuquerque, New Mexico**

**Abstract:**

The City of Albuquerque will use architectural/engineering services to design a multi-product fueling facility. The station will be designed to accommodate existing and future vehicle fuels.

**Participants and Partners:**

General Services Department will manage and document this project. Partners include: Gas Company of New Mexico which will contribute financial and in-kind services; Public Service Company of New Mexico -- in-kind support; Holmes and Narver, Inc. -- to design a replaceable fuel station incorporating fast-fill CNG fueling capabilities and quick-charge electric capabilities.

**Project Director:** Glen Coontz, Special Projects  
**Project Manager:** Mike Minturn  
General Services Department  
P. O. Box 1293  
Albuquerque, NM 87106  
505/786-5300

**Technical Comparison Between Hythane (H<sub>2</sub>/CNG) and CNG Fueled Vehicles  
{Continuation}  
City/County of Denver, Colorado**

**Abstract:**

This is a continuation of the 1991 project. The first year was focused on conducting a field test on Hythane, CNG and gasoline vehicles. The test included formulating an emissions testing plan, designing and building a prototype hythane refueling facility, selecting optimum vehicles, refining conversion technology, and developing data on range, exact fuel composition, engine degradation and drivability. This second year will complete data collection on a 25,000 mileage emissions testing interval and associated oil wear analyses. A market barrier assessment will also be conducted which will consider an economic analysis comparing the blended fuel cost to that of wholesale gasoline, changes to CNG infrastructure to allow for the addition of hydrogen to the system, and public perception attitudes that might influence fleet adoption of hythane.

**Participants and Partners:**

This project will be managed and documented by the department of Environmental Health Services. Public Service Company of Colorado, Air Products and Chemicals have provided financial assistance. Hydrogen Consultants, Inc. has contributed technical support, technical and commercialization insight.

**Project Director:** Steven Foute, Director of Environmental Health Services  
**Project Manager:** Carol J. Hammel  
Health and Hospitals  
605 Bannock Street, MC 1426  
Denver, CO 80204-4507  
303/893-6243

**Reduction of Diesel Exhaust Emissions in Urban Mass Transit Vehicles with Alcohol Injection Systems  
Las Vegas, Nevada**

**Abstract:**

This project will demonstrate a technology designed to give fleet managers of medium- and heavy-duty diesel vehicles the ability to greatly reduce visible smoke emissions, of which particulates are a major portion, with an additional benefit to fuel economy.

**Participants and Partners:**

The Department of General Services will manage and document this project. This is a cooperative effort between other departments, Clark County air Pollution Control District, Midwest Power Concepts, and Regent International.

**Project Director:** J. E. Park, Director  
Project Manager:

Department of General Services  
400 East Stewart, City Hall  
Las Vegas, NV 89101  
702/229-6234

**California Clean Air Act - A Compliance Strategy for the City of San Diego's Non-Emergency Fleet  
San Diego City, California**

**Abstract:**

This project will analyze compliance requirements, related costs and will develop a long term budget strategy for meeting California Clean Air Act mandates. Rule making by the California Air Resources Board has covered low-emission light and medium duty vehicles, clean fuels and a heavy duty diesel smoke and emission control system inspection program. Low-emission requirements for heavy duty engines are expected later this year. Transportation control measures which are also mandated will not be included in this study.

**Participants and Partners:**

Management and documentation of this project will be by the staff of the General Services Energy Program. San Diego State University's Department of Industrial Technology will develop detailed cost estimates on infrastructure and vehicle retrofitting or acquisition.. They will also be involved with the review of California air Resources Board Technical papers.

**Project Director:** Tomas Carlos  
Project Manager: Jean Molentin  
General Services Energy Program  
1970 B Street  
San Diego, CA 92102  
629/525-8532

October 1992



URBAN CONSORTIUM

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**SUMMARY AND ABSTRACTS**

**Applied Research Units and Projects  
1992/93 UCETF Program**

**ENERGY TASK FORCE  
of the Urban Consortium**

**Prepared by**



**PUBLIC  
TECHNOLOGY,  
INC.**

1301 Pennsylvania Ave. NW  
Washington, DC 20004-1793  
202.626.2400  
800.852.4934  
FAX 202.626.2498

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## OVERVIEW

The Urban Consortium (UC) is a network of the nation's largest cities and urban counties by population, brought together by PTL. The Consortium provides a unique creative forum to define urban problems common to its member governments to test and validate practical ways to improve the provision of public services while generating new revenue opportunities, through technology cooperation and innovative management techniques.

Public Technology, Inc. (PTI) is the nonprofit, research, development, and commercialization arm of the National League of Cities, National Association of Counties and the International City and County Management Association, and an association of local governments.

With staff, management and business services provided by PTL, the UC addresses the critical needs of local governments through its three task forces: Energy, Environment, and Telecommunications and Information. The Urban Consortium Energy Task Force (UCETF) is the nation's most extensive cooperative local government program to improve energy management and decision-making through applied research and technology cooperation. Its membership is composed of twenty technical and management local government professionals from urban cities and counties.

Proposals to meet the specific objectives of the UCETF annual R&D program are solicited from major urban jurisdictions. Projects based on these proposals are then selected by the UCETF for direct conduct and management by staff of city and county governments. Projects selected for each year's program are organized in thematic units to assure effective management and ongoing peer-to-peer experience exchange, with results documented at the end of each program year.

### Specific R&D Priorities

Developed to meet both the defined needs of cities and counties as well as national priorities such as the National Energy Strategy, the Clean Air Act, and the Intermodal Surface Transportation Efficiency Act of 1992 (ISTEA), major topics within the 1993 program are (1) Transportation; (2) Integrated Resource Planning; and (3) Energy Efficient Facilities and Buildings.

### Partnership Development

The UCETF has well established partnerships with its city and county members, USDOE, energy utilities, and other organizations. Major efforts have been placed on the expansion of these partnerships with the private industry, community organizations, state governments and academia.

### Visibility and Transfer

The UCETF has a solid record of accomplishments. These successful projects are transferred to other cities and counties through specifically designed activities and reports, print and electronic media, videos, and a series of workshops and conferences.

This summary contains short descriptions of the projects and participants in the 1993 UCETF program. Additional information about this program and other projects of the UCETF is available from:

Mike Lindberg, Chair  
Commissioner of Public Affairs  
1220 S. W. 5th Avenue, Suite 414  
Portland, OR 97204  
503/823-4145

Jack F. Werner, Jr./Ama Frimpong  
Public Technology, Inc.  
1301 Pennsylvania Avenue, NW  
Washington, DC 20004  
202/626-2400

## ENERGY EFFICIENT FACILITIES & BUILDINGS UNIT

### Research Objectives

Activities involving energy efficient facilities and buildings are part of a national effort to achieve maximum cost-effective energy productivity in the building sector. There exists a need for collaboration between local and federal government officials responsible for energy and environment programs and other government officials responsible for facilities; this effort goes hand-in-hand with working with private sector groups. In addition, the marshaling of financial and other resources to meet the needs of more energy efficient facilities is essential. New technologies and management/administration practices to advance energy efficiency in facilities require major partnership efforts and transfer programs. Multi-family housing that has a large concentration of low-income families presents a unique challenge to lowering energy costs and maintaining energy efficient facilities.

Both existing building stock and near-term new construction need to be made much more energy efficient if we are to meet local, state, and national objectives related to energy security, energy supply, and energy affordability. There are many ways to approach improving energy efficiency in all types of people intensive buildings. **This category of buildings includes housing (public and private) and city-owned or subsidized facilities.** Space heating and cooling, lighting, water heating, refrigeration, cooking, ventilation, building envelope, energy efficient codes implementation, operation and maintenance (O&M), education, etc. are areas where opportunities exist to improve energy efficiency. Priority consideration needs to be given to applied research projects that develop methods for using both new and proven technologies appropriate to low-income building stock (single family and multi-family, owned and rented, public and private) to increase energy efficiency.

### Projects and Principal Jurisdiction

Projects and the principal jurisdiction involved with this program are listed below. Summaries of each project, key participants and partners follow.

#### 1993 Projects:

Austin, TX	<i>Green Builder Model Home</i>
Detroit, MI	<i>Energy Optimization of Water Distribution System</i>
Houston, TX	<i>Green Lights Audit Partnership Revolving Fund</i>
Montgomery County, MD	<i>CFC Maintenance and Conversions in Chillers: The Commercial Building Response to the 1990 Clean Air Act</i>
San Francisco, CA	<i>Intervention Strategies for Energy Efficient Municipal Buildings</i>

## **PROJECT SUMMARIES, PARTICIPANTS AND PARTNERS**

***NGV Fleet Fueling Station Business Challenge: A Public, Academic and Utility Partnership to Identify Economical Options for Implementation of CNG Fueling Infrastructure***  
Long Beach, CA

### **Abstract:**

The City of Long Beach is committed to Natural Gas Vehicles (NGV) within its own fleet, encouraging NGV utilization by commercial and private fleet owners, and the resolution of market development barriers due to the availability of fuel. The city already has one fueling station. Such infrastructures are important to the success of NGV market penetration. The primary objectives of this proposal are: Fleet profiling and development of market demand; Distribution and supply of compressed natural gas fuel; capital investment and cost recovery of CNG infrastructure; Defining roles of a municipality and/or municipally owned utility in providing CNG fueling services; resolution of refueling station services and other natural gas infrastructure issues (including legal and operational parameters); development of optimal station design and size scenarios; development of an NGV fleet fueling station business plan

### **Participants and Partners:**

Long Beach Gas Department; California State University of Long Beach; Department of General Services; Fleet Services Division; Various Support Departments

**Project Director:** Ed Hatzenbuehler  
**Project Manager:** Jerome Torres  
Gas Department  
333 W. Ocean Boulevard  
Long Beach, CA 90806  
310-595-5316

***Employee Trip Reduction Demonstration Project***  
Chicago, IL

### **Abstract:**

The objective of this proposal is to reduce the amount of vehicle miles traveled to work between the hours of 6 AM and 10 AM through Monday through Friday. The City of Chicago will reduce its worksites from 20 to 2: one to be located within the Loop-central Business District area, and the other to be located in an outlying neighborhood, where single occupancy vehicle commute patterns are more prevalent and traveling times are longer. The ETR program will aim to reduce the number of vehicle miles traveled to work between the hours of 6 AM and 10 AM Monday through Friday. A survey will be developed and conducted at each site to determine the employees' commute to work patterns. A comprehensive roster of potential transportation control measures (TCMS) will be compiled and assessed for possible inclusion in a compliance/implementation plan. Data from the employee survey, as well as that assessment, will be used to select TCMs for inclusion.

**Project Director:** Debra Bolt  
**Project Manager:** Mary Buchheid  
Department of Environment  
320 North Clark Street, Room 600A  
Chicago, IL 60610  
312-744-3635

***Light Emitting Diodes for Traffic Signal Displays***  
Philadelphia, PA

**Abstract:**

The objective is to replace standard incandescent lamps with Light Emitting Diodes (LED) for the purpose of illuminating highway traffic signals displays. Application of this technology to existing traffic signal displays would likely result in a 70% to 80% reduction in energy consumption. This new and innovative idea could save big cities millions of dollars at a time when cutting costs has become increasingly difficult but necessary.

**Participants and Partners:**

Electrotech's, Inc.; Philadelphia Electric Company

**Project Director:** John M. O'Connell, Chief Energy Management Engineer  
**Project Manager:**

Department of Public Property  
1600 Arch Street, Room 602  
Philadelphia, PA 19102  
215-686-4587

***Commercial CNG Fueling Installation***  
Pittsburgh, PA

**Abstract:**

The focus of this project is to develop a revenue generating public/private fueling installation. The fueling station would include both conventional and an alternative fuel. The City will utilize compressed natural gas as the alternative vehicle fuel. Additionally, the city will install a conversion site and establish it and the fueling terminal as an entrepreneurial venture. The City's participation in the inception of commercial CNG infrastructure development may serve as a blueprint for local governments throughout the nation. Local private and government fleets would be the initial clients.

**Participants and Partners:**

Equitable Gas Company

**Project Director:** Scott Kunka, Fleet Operations Manager  
**Project Manager:** Julie Goldblum  
Department of General Services  
Room 526 City and County Building  
Pittsburgh, PA 15219  
412-255-2770

## TRANSPORTATION

### Research Objectives

Transportation is one of the most visible indicators and a daily reminder of the quality of life for citizens in major urban areas. Alternative transportation fuels (ATFs) are one piece in a very large and complex puzzle facing local governments that includes wide-reaching concerns about transportation and related issues such as land-use planning, energy, environment, depletion of resources, congestion, and sustainability. Major issues in the national arena such as the Clean Air Act Amendments (CAAA) and the Intermodal Surface Transportation Efficiency Act (ISTEA) are the catalysts for projects aimed at addressing pressing energy and environment issues in the transportation sector.

The focus this year is on one of the three broad themes related to the development and widespread use of alternative vehicle fuels as one strategy to address the multiple demands of a clean, efficient, reliable and sustainable transportation system:

- market development;
- infrastructure development; and
- technology-based programs.

### Projects and Principal Jurisdiction

#### 1993 Projects

Chicago, IL	<i>Employee Trip Reduction Demonstration Project</i>
Long Beach, CA	<i>NGV Fleet Fueling Station Business Challenge: A Public, Academic and Utility Partnership to Identify Economical Options for Implementation of CNG Fueling Infrastructure</i>
Philadelphia, PA	<i>Light Emitting Diodes for Traffic Signal Displays</i>
Pittsburgh, PA	<i>Commercial CNG Fueling Installation</i>

production data in terms of direct and indirect CO2 emissions show that electrical power generation and consumption and transportation are the largest contributors to CO2 emissions. Based on those findings, Dade will focus on integrated resource planning. Alternate inventory will closely evaluate demand side management strategies and explore current barriers to utility participation in demand side management programs. The project will also evaluate the cost-effectiveness and environmental benefits of developing district cooling loops at various sites. Additionally, Metro-Dade will develop financial incentives and land use policies which will encourage the use of district cooling loops in new development and redevelopment.

**Participants and Partners:**

International Council for Local Environmental Initiatives (ICLEI); Dade County School Board; Florida International University; University of Miami; Greater Miami Chamber of Commerce

**Project Director:** Douglas Yoder, Energy Office Director  
**Project Manager:** Susan Berryman  
Environmental Resources Management  
111 NW First Street, Suite 1310  
Miami, FL 33128  
305-375-3376

### **Participants and Partners:**

Portland General Electric and Pacific Power and Light; The Oregon Department of Energy; the Oregon Department of Environmental Quality; the Solar Energy Association of Oregon; the Northwest Power Planning Council; Portland Development Commission; and TRI-MET.

**Project Director:** Susan Anderson, Energy Office Director  
**Project Manager:** Curt Nichols  
Portland Energy Office  
1120 SW Fifth Avenue, Room 1030  
Portland, OR 97204  
503-823-7222

### ***Addressing Cost and Non-cost Barriers to the Introduction of Renewables to the Electric Generating Mix.***

New York City, NY

#### **Abstract:**

The aim of this project is to address the gulf between the objective of producing energy efficiently and cleanly and the institutional barriers or constraints in the current regulatory framework. This project will identify both the cost and non-cost barriers to renewable or other non-fossil fuel energy sources, analyze mechanisms to remove these barriers, and present a series of policy recommendations for municipalities to address those barriers. For the purposes of this study, "other non-fossil based fuels" are understood to include wood burning and waste incineration. The project will focus on specific potential changes to the regulatory structure that could encourage or speed the introduction of renewables into the fuel mix of utilities operating in this country's large urban centers.

### **Participants and Partners:**

Independent Power Producers of New York (IPPNY), National Resources Defense Council (NRDC); Brooklyn Union Gas.

**Project Director:** Matthew Brown, Project Director  
**Project Manager:**  
NYC Dept. of Telecom & Energy  
75 Park Place, 6th Floor  
New York, NY 10007  
212-788-6546

### ***A Long Term Urban Carbon Dioxide Emission Reduction Program*** Dade County, FL

#### **Abstract:**

A Continuation Project.. The ultimate objective is to slow global warming by using the tools most readily available to local governments. Dade County is the only subtropical urban area included in the project and will serve as a potential model for other coastal metropolitan areas around the nation and the world. Dade's Total Emissions Model for Integrated Systems (TEMIS) analysis of energy



## **PROJECT SUMMARIES, PARTICIPANTS AND PARTNERS**

### ***Expanding Seattle's Urban Trails Systems into the Central Business District: A Plan to Save Energy, Reduce Traffic Congestion and Improve Air Quality*** Seattle, WA

#### **Abstract:**

The objective of this project is to develop, implement, and evaluate a plan to double current levels of bicycling into and through Seattle's central business district (CBD) by bolstering its links with the existing urban trails system. At the same time, two broader objectives will underscore this project:

1. The creation of a systematic, standardized process for evaluating the impact of improved bicycle facilities on levels of commuter bicycling into the CBDs of major cities
2. The development of a methodology for assessing the savings in energy and the improvement in air quality stemming from increased bicycling into the CBD.

#### **Participants and Partners:**

Seattle Bicycle Advisory Board; Cascade Bicycle Club; Northwest Bicycle Foundation (NOWBIKE)

**Project Director:** Peter Lagerwey, Senior Transportation Planner  
**Project Manager:** Stuard Goldsmith  
Engineering Dept, Bicycle & Pedestrian Program  
600 4th Avenue, 708 Municipal Building  
Seattle, WA 98104-1879  
206-684-7583

### ***BEST -- Businesses for an Environmentally Sustainable Tomorrow*** Portland, OR

#### **Abstract:**

A Continuation project in its second year. During the first year, the program established a one-stop service center to provide information and technical and financial assistance on sustainable business practices, including energy efficiency, renewable resource use, office paper and construction site recycling, transit use, carpooling, water conservation, toxic education, alternative vehicle fuels, and other environmentally beneficial activities. The objective for the second year is to negotiate pay-for-performance contracts with utilities, government agencies and business organizations to make the program self-supporting by January 1994. The primary objectives of the project this year is to:

- a) provide assistance to at least 30 more businesses (50 total for the two years) by December 1993 on ways to use energy and water more efficiently, create less solid waste, and reduce air pollution and greenhouse gases;
- b) develop transferable, model pay-for-performance contracts with local utilities, the State, other local governments, and business organizations to provide long-term support to the program; and
- c) develop a BEST marketing package that other cities can use to establish similar business efforts

## INTEGRATED RESOURCE PLANNING

### Research Objectives

Least cost or integrated resource planning involves the development and implementation of a process in which supply-side and demand-side options are integrated to create a resource mix that reliably satisfies short-term and long-term energy needs for the least amount. An integrated resource plan (IRP) does not simply look for the lowest energy cost, but seeks to balance internal costs, external costs (particularly in the areas of health and environment), and reliability.

The IRP process contributes to the energy and environmental sustainability by appropriately evaluating the resources in the community and how they are spent. At its best, IRP incorporates both short term operational planning and long term strategic planning to achieve the most efficient and economical mix of energy sources that meets customer needs. **It is also an opportunity for renewable energy options to be given equitable consideration in the process.**

General ideas for potential projects in this area fall under one of four broad themes related to the development and implementation of Integrated Resource Planning for local governments that meet the multiple demands of affordable, safe, efficient, reliable energy sources:

- DSM Strategies and Evaluation Techniques
- Economic Analysis
- Market Barriers
- Fuel Diversity

### Projects and Principal Jurisdiction

#### 1993 Projects

Dade County, FL	<i>A Long Term Urban CO<sub>2</sub> Emission Reduction program</i>
New York City, NY	<i>Addressing Cost and Non-Cost Barriers to the Introduction of Renewables to the Electric Generating Fuel Mix</i>
Portland, OR	<i>Businesses for an Environmentally Sustainable Tomorrow (BEST)</i>
Seattle, WA	<i>Expanding Seattle's Urban Trails Systems into the Central Business District: A Plan to Save Energy, Reduce Traffic Congestion, and Improve Air Quality</i>

supervisory control and data acquisition (SCADA) system. SCADA will generate operation statistics for the entire system and will be capable of remotely monitoring, operating, and controlling all booster stations and control devices. The information to be used in this project was gathered and assembled into a computer based database in the 1992 project.

**Participants and Partners:**

Detroit Edison Company; Detroit's Water and Sewerage Department; The Cities of Flint and Troy

**Project Director:** Bob G. Dickerson, Chief Engineer  
**Project Manager:** Frederick R. Janeczko  
Building Inspection Division  
Room 434 City-County Building  
Detroit, MI 48226  
313-224-3243

*Green Builder Model Home*  
Austin, TX

**Abstract:**

The objective of this project is to build a residential structure that will be used as a demonstration facility, training site, and testing and monitoring "laboratory" for issues related to sustainable building practices and materials. This project will bring together many partners from the public and private sectors. Each partner is providing capital outlay to the project and their respective expertise in regards to monitoring the impact of their contribution. Building options promoted by the Green Builder Program will be demonstrated in a manner that will permit analysis of many of the concerns underlying the true effectiveness of sustainable building. Material selections for the Model Home will be based on using recycled content building materials that are available now (although currently not well distributed) that correlate directly to the regional waste stream. An analysis will be conducted to measure the economic development potential of the use of the regional waste stream as a source for the materials used in the Model Home. The Model Home will also be monitored for IAQ

**Participants and Partners:**

Center for Maximum Potential Building Systems Inc. (CMPBS); Austin's Electric Utility Department; Southern Union Gas Company; The Lower Colorado River Authority (LCRA)

**Project Director:** Michael S. Myers, Assistant Director  
**Project Manager:** Doug Seiter  
Environmental & Conservation Services  
206 East 9th Street, Suite 17.102  
Austin, TX 78701  
512-499-3508/9

**Participants and Partners:**

NIST; ICLEI; Maryland Energy Administration, Gas Research Institute, Carrier Corporation; Trane Company; York International; McQuay/Snyder General; Federal agencies in the National Academy's Public Facilities Council

**Project Director:** Paul Tseng, Chief  
**Project Manager:** Dale Stanton-Hoyle  
Department of Facilities and Services  
110 N. Washington Street, Room 329  
Rockville, MD 20850  
301-217-6100

***Green Lights Audit Partnership Revolving Fund***  
Houston, TX

**Abstract:**

The main objective is to establish an internal revolving fund for energy conservation measures (particularly those identified through the Green Lights Program) based on the successful examples identified through previously funded UCETF projects. This project will address the key issue to successfully implement the Green Lights Program activities - a source or recurring funding for identified energy/environmental improvements in buildings and city facilities. It is based on an inter-departmental funding approach. The proposal would use the private sector concept of performance contracting (shared savings from utility savings) to replenish the initial investment over time. It would leverage various initial funding sources from public and private sectors, by using grant funds, utility rebate funds, City funds, and private fund guarantees to establish a pool of funds for initial investment.

**Participants and Partners:**

Houston Lighting and Power; USEPA; Johnson Controls; Honeywell; FLUOR; Amtech and IllumElex;

**Project Director:** Dewayne Huckabay, Director  
**Project Manager:** Felix Johnson  
Office of Energy Management, Finance & Administration  
500 Jefferson, Suite 1800  
Houston, TX 77002  
713-658-6515

***Energy Optimization of Water Distribution System***  
Detroit, MI

**Abstract:**

This is a continuation project. The objective of this project is to develop a computer program which will simulate various pumping and distribution routing scenarios with the objective of minimizing power consumption while maintaining satisfactory pressure and flow distribution for water demand and fire protection. This study will develop an integrated energy strategy and planning guidelines to be incorporated in the computer software and hardware design for the

## **PROJECT SUMMARIES, PARTICIPANTS AND PARTNERS**

### ***Intervention Strategies for Energy Efficient Municipal Buildings*** San Francisco, CA

#### **Abstract:**

The objective of this proposal is to develop and implement intervention strategies that will influence municipal policy makers, designers, building operators and other decision makers to create and maintain buildings that will perform efficiently throughout their lifespans. It has become clear that the most intractable barriers to energy efficiency in government facilities are institutional or "people problems", rather than technical inadequacies. New higher energy efficiency technologies are not getting out of the laboratories into local government facilities. Opportunities to improve energy efficiencies are therefore being lost, along with the associated opportunities to provide the much needed additional financial support to already stretched public services. The solution to this problem is to provide new energy efficient technologies and support services which will persuade and assist workers in incorporating the new technologies into the city's facilities.

#### **Participants and Partners:**

California Energy Commission; Hetch Hetchy Power & Water Project; The Pacific Gas & Electric Company; Lawrence Berkeley Laboratory

**Project Director:** John F. Deakin, Director  
**Project Manager:** Danielle Dowers  
PUC/Bureau of Energy Conservation  
110 McAllister Street, Room 402  
San Francisco, CA 94102  
415-864-6915

### ***CFC Maintenance and Conversions in Chillers: The Commercial Building Response to the 1990 Clean Air Act*** Montgomery County, MD

#### **Abstract:**

This is a continuation project. During the first year, a management plan for chiller refrigerant maintenance and for chiller conversion was developed. This is an unbiased source to guide local governments and other owners in making the tough decisions in retrofitting or replacing current chillers. The results thus far shows that it is possible to produce a plan of action for building owners that has national prestige and credibility along with clear, down-to-earth guidance necessary for actual operations decision making. During the second year, the management plan developed in the first year will be tested in the field to determine its strengths and weaknesses when applied to actual installations. This will involve the County's maintenance division in an evaluation of the various steps to limit the release of CFCs and HCFCs. The results of this project will be documented along with a 10 minute video to teach the highlights of the Management Plan.