Springfield, MA

Action Plan

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I. INTRODUCTION

As part of its continuing mission to enhance its economic and community development, the City of Springfield has embarked on a multi-year program to improve water and energy efficiency in municipal, institutional, commercial, and multi-family buildings, both city- and privately-owned. This program, the REBUILD SPRINGFIELD INITIATIVE, will be implemented in partnership with the US Department of Energy (DOE) as well as city agencies, businesses, local leaders, and the community of Springfield.

The blueprint for the REBUILD SPRINGFIELD INITIATIVE is the DOE s *Rebuild America,* a national program with thousands of people working as partners to renovate buildings and improve energy and water efficiency. These partners include people from all levels of government, the private sector, local and regional institutions, utilities, energy service providers, non-profit groups, and community organizations. Working together, they make communities stronger by stimulating economic growth, creating jobs, saving money, and improving the environment. With the support and guidance of the DOE, the REBUILD SPRINGFIELD INITIATIVE will create a strong community partnership, dedicated to these key goals:

- **Attaining direct economic benefits by promoting energy and water-efficiency**. The retrofitting of existing municipal, institutional, commercial, and multi-family buildings to increase efficiency can lower monthly utility bills by 25% or more. Money-wise strategies such as off-balance-sheet financing and performance-based contracting help to ease project funding and to maximize each investment. In typical *Rebuild America* projects, the DOE estimates that participating cities can realize on average a 13% - 50% return within. to three years of their initial investment. Some projects can achieve even greater returns within shorter payback periods.

- **Creating new jobs and promoting community development**. *Rebuild America* is demonstrated to stimulate economic growth, create jobs, and enhance the visibility and reputation of the participating cities. Labor typically constitutes about 60% of a total energy investment, and about 50% of equipment can be purchased from local suppliers; as a result, about 85% of Springfield's total investment will be retained in the local economy. The REBUILD SPRINGFIELD INITIATIVE will emphasize the City's Enhanced Enterprise Community Zone neighborhoods and other targeted community development projects.

- **Strengthening community ties and engendering civic awareness**. The challenges of planning and executing a successful conservation program will unify members of the Springfield community in an unprecedented way. The program will help to forge bonds among leaders and community-minded people who have a stake in the city's future, building a solid base for other city-based efforts.

- **Safeguarding the environment and improving quality of life**. Because they result in lower fuel consumption and reduced emissions, energy- and water-efficiency improvements translate directly into a cleaner environment. What's more, efficient buildings make more comfortable, effective and productive work places and homes.

- **Encouraging water- and energy-efficiency as the norm**. Making efficiency considerations part of business-as-usual among Springfield's facility owners and managers will help to maintain and increase gains beyond the project period.

- **Using documented project results to promote comparable efficiency activities in other communities**. The REBUILD SPRINGFIELD INITIATIVE can establish Springfield as a model for others both in the state of Massachusetts and across the nation. The DOE plays a key role in sharing lessons learned and replicating program results elsewhere in the United States - while at the same time maximizing national exposure of Springfield as an attractive place to live and work.

By partnering with the DOE, the City of Springfield is tapping into a wealth of technical expertise, financial resources, and operational knowledge gleaned from over thirty years of active conservation planning and implementation in both public and private sectors. Lessons learned from other Rebuild America partnerships - including a multi-year, $50 million dollar project currently underway in Boston - will provide a solid foundation for the REBUILD SPRINGFIELD INITIATIVE as it develops its own local partnership.

Today the City is in the earliest stages of launching and developing the REBUILD SPRINGFIELD INITIATIVE. Our objectives for the first year are fourfold: to establish the core of community partners who will lead the program; to assess the local building stock and set detailed energy- and water-saving goals; to identify and secure sources of funding; and to tailor a detailed action plan for program implementation that is specific to Springfield's needs and objectives. With the help of local community leaders, businesses, utility companies, energy conservation experts, and the DOE, the REBU[LD SPRINGFIELD INITATIVE will succeed in attaining the substantial benefits of water and energy conservation while promoting economic and community development in greater Springfield.

II. PROGRAM OVERVIEW

A. PROGRAM GOALS

The REBUILD SPRINGFIELD INITIATIVE is an innovative three- to five-year partnership designed to aggressively and consistently incorporate energy and water efficiency in the Springfield community. The REBUILD SPRINGFIELD INITIATIVE will target the Springfield building stock, including multi-family housing, commercial and industrial (C&I) properties, institutional buildings, and City buildings and schools. The REBUILD SPRINGFIELD INITIATIVE has set a goal of reducing energy and water usage in these targeted areas by at least 25%, which will be accomplished through the implementation of selected energy conservation measures and with the assistance of the DOE and partners in the Springfield community. As described in Section III, "Program Implementation," more specific energy and water saving goals will be set as part of the Program's first planning phase.

Following the blueprint of the DOE s *Rebuild America* program, the REBUILD SPRINGFIELD INITIATIVE promises to deliver to the community the significant benefits of energy and water conservation:

- Direct reduction of energy costs, which frees up public and private funds to invest in other areas
- A decrease in operational and maintenance (O&M) costs for the targeted buildings
- Improved lighting and air quality in targeted buildings, which leads to enhanced productivity, reduced employee absenteeism, and a more comfortable environment for workers and residents
- New jobs in construction trades during the project period, as well as increased business for local designers, engineers, energy service providers, and equipment and material suppliers
- New permanent jobs through the encouragement of "green" industries
- Reduced emissions of CO2, SO2, particulates, and other pollutants associated with the combustion of fossil fuels

The cumulative result of these benefits will be increased employment, an improved building stock, greater quality of life, and an enhanced competitiveness in terms of attracting new business to Springfield.

B. THE RATIONALE FOR ENERGY CONSERVATION

The fundamental rationale for conservation is its ability to liberate substantial amounts of money now being wasted through outdated or poorly designed technologies. Consider the simple example of a lighting retrofit of a typical 10,000 square foot commercial off1ce building. Relamping with T-8 lamps and electronic, high-efficiency ballasts may cost around $13,300 ($50 each for 266 fixtures) and produce an annual savings of about $4,800 per year (80,000 kWh at S0.061kWh). The simple payback for this lighting retrofit would be $13,300 - $4,800/year = 2.8 years. That is without even counting savings available through demand reduction, the improvement would pay for itself in 2.8 years, a 36% simple return on the investments. Further, the energy-efficient equipment should continue to generate its $4,800 per year savings long after the simple payback was realized.

The *Rebuild Boston Energy Initiative*—a *Rebuild America* partnership serving the greater Boston area—is investing $O0 million to improve energy and water efficiency in 5,000 public housing units and more than 15 million square feet of residential and commerci21 space. Like the REBUILD SPRINGFIELD INITIATIVE, the partnership hopes to improve efficiency by at least 25%, cutting

participants energy bills by $6 million annually and saving $1.8 million in taxpayer dollars for energy subsidies to the poor. By the year 2000, the Boston program will create 700 new jobs. Specific targets that are similar in scope will be established for the REBUILD SPRINGFIELD INIMATIVE as part of planning process.

C. PROGRAM STRUCTURE, RESOURCES AND MECHANISMS

1. The Partnership

The key players in the REBUILD SPRINGFIELD INITIATIVE are the DOE, the City of Springfield, and—perhaps most important—the members of the Springfield community who support the program. Table 1 offers an overview of these players and their responsibilities.

Partners	**Area of Responsibility**
US Department of Energy	♦ Assign a Program Representative to be the point of contact with the DOE for the REBUILD SPRINGFIELD INITATIVE. The Program Representative will assist the REBUILD SPRINGFIELD Initiative in the development and implementation of the community's energy-efficiency program. ♦ Provide opportunities for competitive grants and other forms of program funding ♦ Recognize the community as an active participant in the Rebuild .America program ♦ Promote the program at state and local levels ♦ Promote exchanges of information and provide guidance, workbooks, and reference contacts ♦ Sponsor workshops on applicable energy efficiency and renewable energy topics
City of Springfield and other Community Partners *State & local government* *Gas & electric utilities* *Chamber of Commerce* *Financial institutions* *Energy service companies* *Business leaders* *Building owners & managers* *Contractors & builders* *Real estate companies* *Media organizations* *Trade associations* *Communities organizations*	♦ Develop a multi-year Implementation Plan stating specific energy-efficiency goals and describing the organizations that will act in the community-wide partnership to meet these goals ♦ Carry out the Implementation Plan by promoting and coordinating the installation of energy and water saving improvements in the targeted building stock ♦ Act as a single point of contact for building owners and managers seeking the technical and financial resources needed to conduct appropriate eff1ciency projects ♦ Promote the participation of the community in the DOE's *Rebuild America* program, using the *Rebuild 4merica* logo on marketing and informational materials ♦ Document program results and share them with the DOE and other interested parties seeking to replicate results in other communities

2. Program Funding

During its first twelve to sixteen months, the REBUILD SPRINGFIELD INITIATIVE will draw on funding available from a wide variety of sources: grants, charitable donations, existing O&M budgets, utility-sponsored rebates and loans, and a range of energy-efficiency financing options. One goal of the program is to engender enough community involvement that donations of time and resources can help to minimize administrative costs. In the long-term, the REBUILD SPRINGFIELD INITIATIVE will become self-funding as a small percentage of project financing is diverted back into the administrative budget.

Individual conservation projects can be funded almost wholly from the savings they realize. Capital for these projects is available through the strategic financing mechanisms that have emerged in the last ten years to offset the decrease of utility-sponsored funding for conservation. By taking the burden off the building owner or manager, these mechanisms have helped lower traditional barriers to water- and energy efficiency investments. Off-balance-sheet arrangements allow building owners to finance their improvements without depleting their limited credit; Energy Service Companies (ESCOs), which specialize in conservation projects, offer the expertise and financial resources to guarantee energy savings; and most financing arrangements feature monthly payments that are less than the monthly energy savings, thereby ensuring a positive cash flow for the building owner.

3. Additional Technical And Financial Resources

Over the past thirty years—thanks in large part to the mandates of state utility commissions, federal agencies, and municipal utility boards nation-wide—parties at all levels of the government and private sectors have developed effective strategies for designing, financing, implementing, and evaluating energy and water conservation programs. Participation in the DOE's *Rebuild America* program places this thirty years of experience in the hands of the REBUILD SPRINGFIELD INITIATIVE and its community partners. In many cases, the objectives and strategies of the REBUILD SPRINGFIELD INITIATIVE overlap with existing programs and organizations already active in the greater Springfield area and across the United States. Whenever possible, the REBUILD SPRINGFIELD INITIATIVE will increase its regional and national exposure by aligning itself with these programs:

- Programs sponsored by the Environmental Protection Agency (EPA), such as the Green Lights Program and the Energy Star Building Program
- Other programs sponsored by the DOE, including the Energy Fitness Program, the Motor Challenge Program, the Clean Cities Program, the Climate Wise Program (co-sponsored by the EPA), the Cool Communities Program, and the Municipal Energy Management Program
- Programs sponsored by the US Department of Housing and Urban Development, such as the Community Development Block Grant Program; Empowerment/Enterprise Communities; John Heinz Neighborhood Program; Section 8 (low income) programs
- Conservation programs of the Western Massachusetts Electric Company
- Conservation Programs of Bay State Gas and the Energy Efficient Procurement Collaborative

In addition, the REBUILD SPRINGFIELD INITIATIVE will draw upon the technical and financial resources offered by these organizations:

Massachusetts Energy Efficiency Council
Massachusetts Division of Energy Resources
Springfield Water Authority
Springfield Water and Sewer Commission
Springfield Housing authority
Bay State Gas
Western Massachusetts Electric Company
American Council of Energy Efficiency
National Association of Energy Service Companies
Lighting Research Center
Community Action Programs
Western Massachusetts Manufacturing Partnership
Massachusetts Housing Finance Agency
US EPA
Association of Energy Engineers
Center for Environmental Technology
Environmental Federation of New England
MA Department of Environmental Protection
Building Owner and Managers Association
Electric Power Research Institute
Edison Electric Institute
Conservation Law Foundation
Citizens Councils
Development Authorities
Hampden County Energy Council

4. Program Timeline

The REBUILD SPRINGFIELD INITIATIVE is divided into three phases: 1) infrastructure development; 2) program planning through a step-by-step Action Plan; and 3) field implementation of the program. The first two phases make up the first year of the program, while phase three constitutes the remaining two to four years of the active program period. Table 2 provides an overview of these phases and their component steps. Please note that in actual practice, many of these steps may be pursued concurrently or in a different order

Phase	Activity
Phase 1 Creating the infrastructure	♦ Form the partnership. Found the steering committee; establish the scope of the program; identify responsibilities and membership; identify resources, information, and contacts ♦ In a cooperative effort with the DOE and community partners, document and formalize partner roles and responsibilities ♦ Clearly express goals and organization of the REEUILD SPRINGFIELD INITIATIVE
Phase II: Action Plan Development and Execution	♦ Establish an energy-and-water-use baseline for Springfield's building stock. Collect energy and water-use data; collect local data; analyze data. *Use of existing baselines prepared by WMECO and Bay State Gas for their energy conservation programs may expedite this step.* ♦ Conduct initial screening of water and energy-efficiency improvements. Calculate energy-use indices; analyze building performance; graph the indices; establish parameters for targeted building stock and approved measures. Adoption of cost-effectiveness tests and quality standards established by; WMECo and Bay State Gas for their energy conservation programs may expedite this step

♦ Establish financing mechanisms. Select a cost/benefit analysis method; select and arrange financing mechanisms	♦ Develop a model energy performance contract ♦ Prepare a formal Implementation Plan that identifies targeted building stock and candidates for renovation; lists actions and resources needed to perform cost-effective retrofit projects; identifies requirements for monitoring and evaluation of program implementation and results; and details a plan for promoting the program on a local, state, and national level
Phase II: Program Implementation	♦ Evaluate buildings. Conduct water and energy audits and review results. Conduct pre-installation monitoring of energy use as appropriate. Identify cost-effective water and energy improvements ♦ Install water and energy conservation improvements. Verify installations and conformance with building codes and regulations. ♦ Verify and report results. Perform post-installation monitoring of results. Report results to the DOE

III. ACTION PLAN

A. ESTABLISHING THE PARTNERSHIP

The REBUILD SPRINGFIELD INITIATIVE offers tremendous benefits to the Springfield community above and beyond the technical and financial assistance offered by the DOE. The program is based on a collaboration of city leaders working together to ensure that adequate resources are available for the completion of tasks that benefit everyone. The cooperation of the City government, local business leaders, and citizens for a common cause will set a strong precedent for positive community development, helping not only to attain program goals, but also to lay a foundation for future initiatives.

Perhaps most important, a robust partnership will serve to concentrate all the elements needed for a successful energy- and water-conservation program. For the building owner or manager, the single most important contribution of the REBUILD SPRINGFIELD INITIATIVE will be its ability to act as a comprehensive, "one-stop" conservation resource. The program will provide a single point of contact for members of the Springfield community wishing to assess, finance, procure, implement, and evaluate energy- and water-saving improvements. The technical and operational expertise cultivated within the partnership will ensure that each conservation project leads to equipment installations that are cost-effective and of high quality.

1. Partnership Levels

The REBUILD SPRINGFIELD INITIATIVE has the potential to benefit everyone in the community: saving money, helping Springfield grow in national prestige, increasing competitiveness in terms of attracting new business, developing employment opportunities, and raising the standard of living. Further, participation offers opportunities for local, regional. and national publicity. Program guidelines suggest a structure in which partners can select among various levels of participation—an approach that allows community members to make commitments appropriate to their own abilities and interest levels. The basic partnership levels are described below:

- **The Steering Committee Partner**. As the name implies, the Steering Committee partner will play a leadership role in the REBUILD SPRINGFIELD INITIATIVE, driving its planning and implementations stages. During the two major phases of the program. Steering Committee membership will vary to match the challenges of assessing Springfield's needs, developing the Implementation Plan, and implementing the program in the field.
- **The Partner Sponsor**. A partner sponsor will contribute or obtain operating funds for the REBUILD SPRINGFIELD INITIATIVE, thereby providing the resources needed to properly execute this venture. Benefits to the partner sponsor will include tax advantages and free publicity. During the first year, REBU1LD SPRINGFIELD INITIATIVE will seek at least S100,000 in contributions to defray program start-up costs .
- **The Partner Ally**. The partner ally is an individual, agency, company, or organization that can dedicate material resources, technical expertise, or person-hours to the program; of course, this ally may also choose to participate directly in receiving energy- and water-efficiency services. Examples would be local media providing space or time for recognition, advertising, and progress reports; printers providing mailers, posters, brochures, and other collateral materials; advertising/marketing agencies lending their expertise; or hotels providing accommodations for out-of-town guests.

- **The Partner Participant**. The partner participant is any provider or consumer of efficiency-related services that benefits directly from the program. Examples are the building owner who seeks to improve his or her facility; the bank which provides financing for the improvements; the engineer that specifies the improvements; the vendor which supplies materials to be installed; or the energy service provider which installs the measures.

The REBUILD SPRINGFIELD INITIATIVE will enlist participants from many sectors of the community:

- Electric and gas utility companies
- Energy Service Companies
- Non-profit entities
- Universities and colleges
- Building owners and property managers
- State and city government
- Environmental firms and agencies
- Hotels
- Chamber of Commerce and trade associations
- Financial institutions
- Public and private business
- Advertising and marketing agencies
- Local newspapers and publications
- Local design community
- Local suppliers
- Builders and contractors
- Federal agencies
- Community action agencies

2. Enlisting Partner Participation

a. Enlisting the Nucleus of Community Leaders

As the first step in enlisting program partners, organizers of the REBUILD SPRINGFIELD INITIATIVE will recruit a nucleus of key community leaders to assist in publicly launching the program. Selected from among dedicated stakeholders in Springfield's future, these leaders will include representatives from the Mayor's office, the Chamber of Commerce, Bay State Gas Company, Western Massachusetts Electric Company, property managers, and at least one high-profile publication serving the Springfield area. Initially, these leaders will be asked to coordinate and execute four tasks:

- Promote the program among their networks of contacts and engender enthusiasm
- Publicize the RE3UILD SPRINGFIELD INITIATIVE using appropriate internal and external communication tools and media
- Use community standing and influence to gain support of the program and to encourage participation among community members
- Recruit community members to attend a kick-off meeting

b. Recruiting a Local Newspaper or Publication

Critical to the success of this effort will be the recruitment of a local publication that can promote the program and provide on-going reports of REBUILD SPRINGFIELD INITIATIVE progress to the community at large. The publication must provide a significant circulation base .o both the residential and business communities of Springfield. Further, the publication must make a commitment to attend all major program events and to report on key aspects of REBUILD SPRINGFIELD INITIATIVE:

- Publicizing the program concept
- Publicizing the kick-off meeting
- Promoting the partners that agree to participate in the program and their roles
- Reporting on program progress and milestones
- Publicizing the outcomes—both successes and failures—of program implementation

c. The Kick-off Meeting

The kick-off meeting will introduce REBUILD SPRINGFIELD INITIATIVE to the public and engage its support for the program. To ensure a comprehensive view of the program, the meeting agenda should include a formal introduction of the REBUILD SPRINGFIELD INITIATIVE by the Mayor; an introduction of *Rebuild America* by a DOE representative; a presentation of a successful conservation project by an ESCO; a discussion of off-balance-sheet, positive-cash-flow financing by a lending institution; an overview of where the REBUILD SPRINGFIELD INITIATIVE has- been and where it is going; and a presentation on how community members can become involved.

To ensure that the kick-off meeting is attended, the REBUILD SPRINGFIELD INITIATIVE will pursue three avenue:

- Announcements of the program and the meeting through local media
- A bulk mailing to commercial and residential community members
- A telemarketing effort targeted to key community leaders

During the kick-off meeting, interested community members will be provided with program materials and a copy of this action plan. These members will be invited to attend a second meeting for the purpose of forming program committees.

3. Forming the Steering Committee and Subcommittees

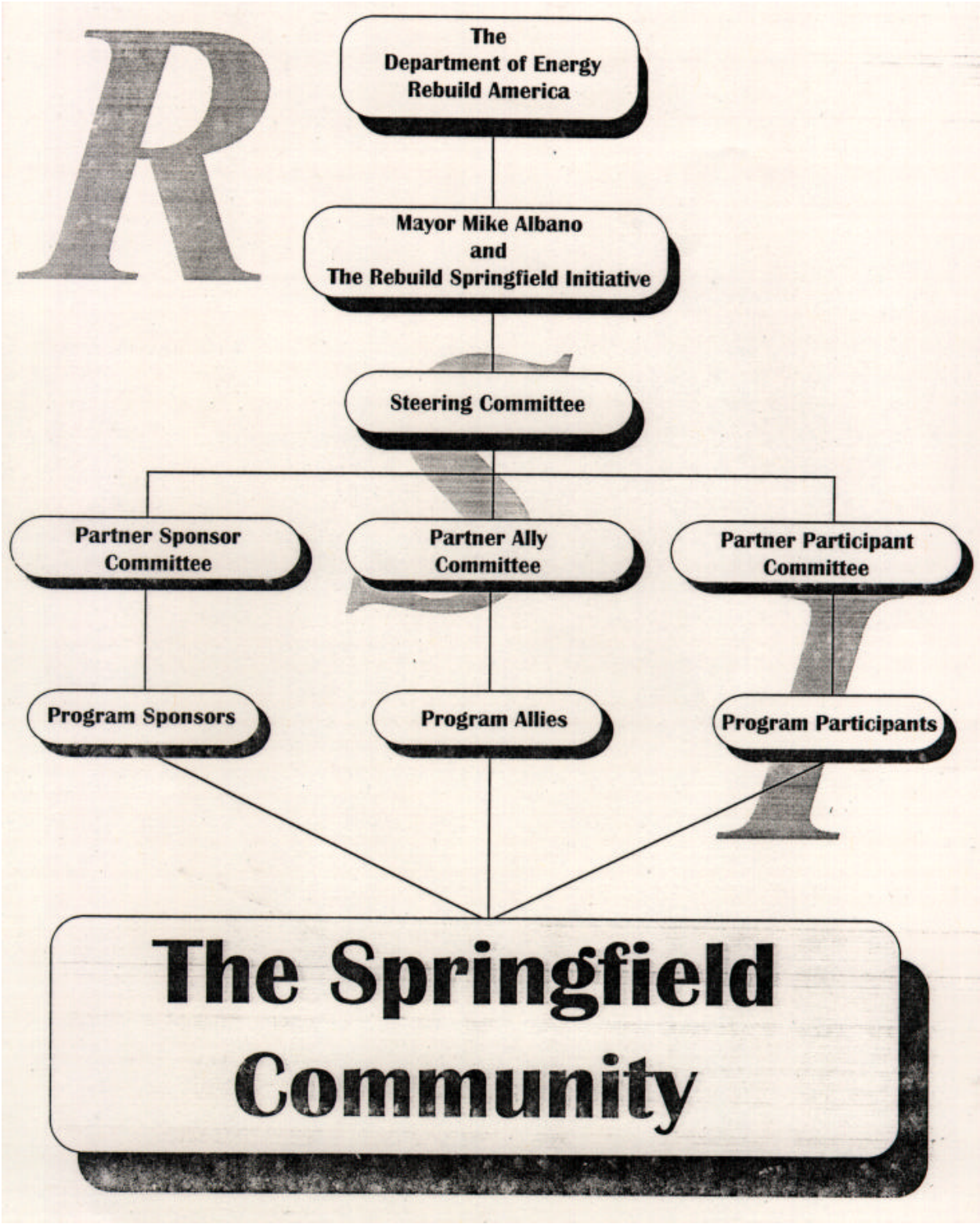
The second public meeting of the REBUILD SPRINGFIELD INITIATIVE will bring together those community members who have demonstrated an interest in participating in the program and who will agree to provide guidance, time, and vision to the effort. During this meeting, these community members will form committees and elect committee chair-persons as described below:

- **The Steering Committee**. The Steering Committee will be made up of individual leaders Of organizations with the ability and drive to oversee the efforts of a subcommittee or one particular aspect of the program. In addition to contributions within their areas of expertise, members will be responsible for engendering enthusiasm and enlisting broad-based support of the program within the community. Further, the Steering Committee will be charged with the tasks of directing overall planning efforts, coordinating publicity, and preparing the final Implementation Plan.
- **The Partner Sponsor Subcommittee**. The Partner Sponsor Subcommittee will focus on obtaining funding for the program. The REBUILD SPRINGFIELD INITIATIVE anticipates that while community participation may go a long way toward securing program resources, funding will be necessary to achieve certain goals. The Partner Sponsor Subcommittee will solicit financial support from individuals, corporations, foundations, associations, government agencies, and others. To secure conservation project funds, the subcommittee will select financing institutions to participate in the

program. Further, the subcommittee will establish mechanisms to ensure that the REBUILD SFRINGFIELD INITIATIVE becomes self-funding during the implementation phase.

- **The Partner Ally Subcommittee**. The Partner Ally Subcommittee will focus on enlisting the participation of local business, associations, and government agencies offering resources for the administration and promotion of the program. Local businesses—such as printers, advertising/marketing agencies, office supply companies, or temporary employment agencies—will receive recognition in the selected publication for providing their expertise, products, or services. The Partner Ally Subcommittee will coordinate the activity of program participants to facilitate the timely and effective delivery of resources and service needed for a successful program.
- **The Partner Participant Subcommittee**. The Partner Participant Subcommittee will provide the core of technical expertise and material resources needed to ensure a successful energy- and water conservation effort. This subcommittee will enlist the participation of utilities, ESCOs, energy- or water-saving product suppliers, engineers, attorneys, and building owners/property managers interested in making an investment in conservation. Further, subcommittee members will play a key vole in assessing the targeted building stock, identifying conservation goals and delivery mechanisms, developing a model performance based contract for implementing efficiency-improvements, designing the Implementation Plan, and implementing the program in the field.

The organizational chart on the following page represents the envisioned project structure.


The
Department of Energy
Rebuild America
Mayor Mike Albano
and
The Rebuild Springfield Initiative
Steering Committee
Partner Sponsor
Committee
Partner Ally
Committee
Partner Participant
Committee
Program Sponsors
Program Allies
Program Participants
The Springfield
Community

B. ESTABLISHING ENERGY AND WATER CONSERVATION GOALS

1. Collecting Baseline Data

Under the guidance of the Steering Committee, the Partner Participant Subcommittee will research existing conditions in the Springfield community. Information provided by this research will provide a baseline or benchmark from which to measure the efficiency of the existing building stock, the availability of local resources, and how high to set program goals. Further, a basic knowledge of the building stock will help program organizers know what sectors of Springfield's building stock will be best to target, what technologies are most appropriate to attain the savings, and what strategies offer the best avenues to fund and implement those technologies.

The baseline study will be performed with the help of Springfield's gas and electric utilities, city agencies, and local experts. The research will combine both existing information and original data collected for this program using methods such as on-site data collection, telephone interviews, and assessment of meter data and billing histories. In addition to profiling the building stock, the study will help to characterize local water- and energy-efficiency markets.

The REBUILD SPRINGFIELD INITIATIVE will collect and assess a variety of data:

- The number, location, and square-footage/number of dwelling units of municipal, institutional, commercial and multifamily buildings in the Springfield area
- Building type and use, age, and hours of occupancy
- Meter information, rate schedule information, and billing histories for gas, electric, and water service
- Weather data
- Ownership/occupancy
- Energy performance data as described by energy use indices for average local buildings
- The names and addresses of suppliers for energy- and water-efficiency products, including plumbing equipment and supplies, water leak detection instruments and services, lighting equipment, motors, pumps, HVAC equipment, energy management systems, windows and doors, insulation, and weatherization services
- If available, conclusions and recommendations from utility-sponsored process and impact evaluations of local conservation programs, including attitudes of building owners/managers regarding energy-and-water-conservation and the financing of efficiency improvements

In many cases, this information will be available from existing studies conducted by Bay State Gas and the Western Massachusetts Electric Company.

2. Analyzing Data and Setting Goals

a. Developing Energy Use Indices

Energy Use Indices (EUIs) combine building characteristics with energy data to provide a simple benchmark for evaluating energy performance. In addition to targeting energy-saving opportunities, EUIs can help to identify problems in specific buildings such as unnecessary after-hours use of lights and mechanical systems, inefficiency in lighting or other systems, or excessive infiltration of outdoor air into conditioned spaces.

To provide the basis for informed goal setting, the REBUILD SPRINGFIELD INITIATIVE will develop a database of EUIs for its building stock, including the following indices:

- **Electrical Consumption Index**. Monthly, annual, and annualized electrical consumption indices calculated in kilowatt-hours per square foot (kWhlft2)
- **Electrical Peak Demand Index**. Monthly and annual electric peak demand indices reported in Watts per square foot (W/ft2)
- **Electrical Load Factor**. Monthly and annual electrical load factors (ELFs). The ELF is the ratio between the average load (electrical power used) over a period and the peak load for that period.
- **Electrical Occupancy Load Factor**. Monthly and annual indicators of after-hours energy consumption.
- **Natural Gas Consumption Index**. Monthly, annual, and annualized indices representing the natural gas consumption for a building, calculated in thousands of Btus per square foot of floor space (kBtu/ft2)

b. Evaluating Building Performance

Once EUIs are compiled, their values can be compared to national samples of building EUI data, as well as existing data compiled for Massachusetts. Based on large, statistically significant samples of buildings across the region and the country, these data offer a gauge by which the REBUILD SPRINGFIELD INITIATIVE can assess local buildings and sort them into "low," "mid," and "high" categories of consumption intensity. Further, by correlating the EUIs with other building characteristics, the program's energy experts will be able to identify on a building-by-building basis the likely causes of high consumption and their best remedies. Through this analysis, the REBUILD SPRINGFIELD INITIATIVE will select sectors of the Springfield building stock to target for conservation, as well as specific operational strategies that promise the most significant results.

C. FUNDING THE PROGRAM

1. Developing Start-up Capital

One of the key tasks of the Partner Sponsor Committee will be to obtain adequate funds to pay for the administration of the REBUILD SPRINGFIELD INITIATIVE during the program's first twelve to sixteen months. The Committee will present the program to individuals, 2ssociations, organizations, and government agencies with the goal of raising $100,000 during year one. It IS important to note that of the fifty new *Rebuild America* partnerships anticipated nationwide during f1scal year 1996, six to ten partnerships will receive financial assistance from the DOE; many more will receive substantial technical assistance above and beyond the basic program offering. Awards for financial and technical assistance are made annually on a competitive basis. The Partner Sponsor Committee will apply for assistance from *Rebuild America* and provide ongoing stewardship for any grants awarded each year.

At the same time, the Committee will investigate other conservation programs offering incentives that can help defray the costs of energy- and water-efficiency projects. For example, Demand Side Management (DSM) programs offered by Bay State Gas and Western Massachusetts Electric Company provide funding and technical assistance for building audits, energy-engineering services, and the purchase and installation of efficient equipment. Whenever possible, participants in the REBUILD SPRINGFIELD INITIATIVE will be referred to existing DSM efforts, and program mechanisms will be designed to dovetail with utility sponsored initiatives.

2. Energy-efficiency Financing

A central fact of energy- and water-efficiency programs, demonstrated by thirty years of conservation, is that an informed building owner or manager can successfully undertake capital improvements financed entirely from future energy and water savings. One of the key functions of the REBUILD SPRINGFIELD INITIATIVE will be to provide basic education, financial guidance, and technical skills needed by local building owners and managers wishing to finance cost-effective improvements.

During the planning stages of the program, the Partner Sponsor Committee will solicit the participation of local lending institutions willing to provide energy-efficiency financing to program participants. Investments offering high returns and rapid paybacks—such as lighting retrofits—are good candidates for energy-efficiency financing. This conventional loan arrangement provides capital needed to conduct a complete assessment of the conservation opportunity, to screen specific measures for cost-effectiveness, and to hire contractors to install the improvements. The soundness of energy-efficiency investments can be readily demonstrated to the lending institution, and the significant reductions in energy use ensure that monthly savings on energy bills are greater than monthly loan payments.

3. Performance Contracting

The REBUILD SPRINGFIELD INITIATIVE anticipates that the greatest number of efficiency investments will be carried out under performance contracting arrangements. Under performance contracting, the building owner or manager enters into an agreement with an Energy Service Company, or ESCO, which agrees to finance and install energy- and water-efficiency improvements, accepting as compensation a percentage of project savings over time. The ESCO provides a "one-stop" service,

conducting an audit of the building, assessing efficiency options, and installing those improvements deemed to be cost-effective.
Because the success of performance contracting is tied so closely to the level of savings achieved, verification of savings is a critical part of the arrangement. Typically, the targeted equipment will be extensively metered before and after the retrofit or replacement to determine the exact level of savings. In many performance contracts, the ESCO *guarantees* that savings will be achieved at a pre-determined level.

One of the advantages of performance contracting is that it allows the building owner or manager to install new equipment without capital investment and with no impact on capital budgets. This format generally qualifies as "off-balance-sheet" financing, since the payments from savings are drawn from operating budgets. This designation can be very helpful to financially burdened businesses or institutions. It allows the building owner or manager to preserve credit lines, avoiding violation of existing loan covenants or the need to seek approval from other lenders.
Although not widely known outside the energy conservation industry, performance contracting is a proven approach. It is practiced by the Massachusetts Division of Capital Planning and Operations in its state buildings program, and it is an option in the state's Energy Engineering Program. Performance contracting is an integral part of the MHFA capital improvements program, as well as the *Rebuild Boston Energy Initiative.*

4. Establishing Self-funding Mechanisms

Once the REBUILD SPRINGFIELD INTIATIVE has entered its implementation stage, the majority administrative funds will be obtained on a fee-basis from participants using energy-efficiency financing and performance contracting to finance their conservation investments. Currently, the *Rebuild Boston Energy Initiative* seeks a 1-2% service charge from any financing agreements. The details of such an arrangement will be finalized by the Sponsor Partner Committee during the planning stages of the program.

D. DEVELOPING THE IMPLEMENTATION PLAN

The Steering Committee will take primary responsibility for integrating the findings of its subcommittees and preparing a comprehensive Implementation Plan t-or the program. At a minimum, the Implementation Plan will incorporate the following information:

- Characteristics of the target universe, including geography, demographics, number of multi-family
- units targeted, square footage of C&I space, and summary data on end-uses
- Actual energy- and water-saving goals for each sector of the target universe
- Estimated total dollars to be invested to achieve savings goals
- Estimated societal benefits, including targets for job creation and benefits for the environment
- Step-by-step strategies and guidelines for marketing the program, identifying building owners/managers in targeted segments, and recruiting participants
- Step-by-step strategies and guidelines for conducting water- and energy-audits, conducting cost-effectiveness screening on possible improvements, financing cost-effective improvements, installing measures, and monitoring quality
- A sample performance contract

- Step-by-step strategies and guidelines for verifying savings for each project, evaluating overall results of the program, and reporting results to the community and to the DOE

E. PROGRAM PROMOTION AND MARKETING

1. Promoting Public Awareness

Community support and participation in the REBUILD SPRINGFIELD INITIATIVE is the foundation of the program and the key ingredient for success. It is critical that publicity be thoughtfully conceived and consistently executed throughout the planning and implementation stages of the program.

The primary mouthpiece of the program will be the major newspaper or publication recruited to handle publicity. However, other print media, press releases, radio advertising, and coverage of special events by local television and newspapers can all be integrated into REBUILD SPRINGFIELD INITIATIVE promotions, depending upon levels of support obtained by the Partner Ally Subcommittee.

City-wide publicity should focus on the following themes:

- **Awareness of the *Rebuild America*** and Rebuild Springfield initiative names. Name recognition is important in developing the enthusiasm and trust of potential allies and participants. Local leaders and business people will require a high level of comfort with the program before committing time and resources to conservation projects. Further, if the program is to serve as a single point of contact for building owners and managers seeking support for their conservation efforts, name recognition is essential.
- **Understanding of the benefits and practicality of energy- and water-conservation.** In many cases, renovation efforts and O&M budgets neglect conservation questions because decision makers are unaware of the benefits of conservation or of how to make it all happen. The REBUILD SPRINGFIELD INITIATVE will seek to educate the community about reduced bills, societal benefits, and the wealth of resources available to assist in a cost-effective conservation project.
- **Understanding benefits of becoming a program partner**. Program organizers will need to persuade city leaders and business people from a broad spectrum within the community to devote time and resources to the conservation effort. To succeed, they will need to effectively convey the benefits of becoming a program partner. This strategy must include regular and prominent recognition of partner contributions to the REBUILD SPRINGFIELD INITIATIVE.
- Program goals and milestones. Clear annunciation of goals and celebration of milestones are important motivators in developing a community-based program. The public awareness campaign must make regular announcements promoting program initiatives and their results, with emphasis on levels of achievement in energy conservation, water conservation, job creation, and community development. Continued promotion of program goals and milestones helps keep the program name and mission in the minds of community members, engendering familiarity with and support for the program.

2. Targeting Model Facilities

To persuade building owners and managers that conservation is both feasible and rewarding, the REBUILD SPRINGFIELD INITIATIVE will select several model facilities, conduct conservation projects, and publish the results. These demonstrations will help to explain and promote the program while providing an opportunity for fine-tuning of the implementation plan.

The REBUILD SPRINGFIELD INITIATIVE will select several facilities within each sector of the building stock targeted for energy- and water-efficiency improvements. Members of the Partner Participant Subcommittee will contact the facilities and solicit participation of the building owners/managers in a demonstration project.

- A qualified energy auditor will visit the facility and conduct an in-depth assessment of the site, confirming, the age and size of the building, hours of use, and occupancy. Further, the auditor will collect data on building characteristics and energy/water use, including building type, building shell characteristics, systems for water distribution and sewage, and the type, quantity, and efficiency of energy-using equipment of all fuel types. Lighting, computer equipment, HVAC systems, Energy Management Systems, motors, pumps, process equipment, laundry and cooking facilities, and other site-specific end-uses will be measured. The auditor will request copies of any existing building plans as well as current meter data.
- Data collected during the audit will be evaluated, and the auditor will make recommendations for energy- and water-efficiency improvements that meet the program's cost-effectiveness guidelines. The audit report will include an overview of projected costs, savings, and financing opportunities available through the program.
- If the building owner/manager agrees to implement the project, the REBUILD SPRINGFIELD INTIATIVE will coordinate the conservation project. Steps include pre-installation metering of targeted equipment, development of detailed equipment specifications, solicitation of bids from qualified installation contractors or ESCOs, arrangement of financing, and verification of savings after the installation.

The REBUILD SPRINGFIELD INITIATIVE will publicize the demonstration projects, including project steps, costs, and savings.

3. Strategies for National Recognition

To participate in *Rebuild America* a partnership must commit to documenting its processes and results and sharing that information with the DOE and other partnerships interested in replicating the program. This sharing of information, besides encouraging energy conservation, offers a way to promote Springfield as a leading community in which to live and do business. The DOE actively publicizes the *Rebuild America* partnerships on the local, state, and national levels.

During the writing of the Implementation Plan, the REBUILD SPRINGFIELD INITIATIVE will develop detailed guidelines and procedures for documenting and reporting processes and results for each project. Reports should include the following information.

- Program goals and delivery mechanisms, including energy- and water-conservation goals, environmental goals, job creation, and other societal benefits
- Levels of participation by program partners
- Program milestones and lessons learned in developing the partnership
- Results of demonstration projects
- Levels of participation among building owners and managers wishing to conduct conservation projects
- Dollars invested by participants for capital improvements
- Types of equipment installed

- Actual goals attained in terms of energy- and water-conservation, environmental benefits, job creation, and other societal benefits

Methodically verifying and documenting levels of energy- and water-savings will enhance the credibility of REBUILD SPRINGFIELD INITIATIVE with local agencies, government off1ces, and other organizations in the community. When systematically reported to *Rebuild America*, these results will assist in ongoing grant applications and contribute to the success of other similar community programs around the country.