leveraging the stimulus:

how to retrofit communities to build equity & sustainability

PLAN MODEL

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TABLE OF CONTENTS

INTRODUCTION

Maximizing the Impact of the Stimulus

The federal economic stimulus plan seeks to revive the national economy while transforming the country's civic infrastructure. Programs within the stimulus include health care, education, energy efficiency and innovations, and scientific research. Concurrently, the plan increases investment in job creation, infrastructure, and energy use reduction. Thus, the stimulus attempts to link a short-term economic revitalization strategy to long-term goals including greater equity, stable communities, and minimizing global warming. Maximizing the positive impact of the stimulus requires that stimulus funding streams and programs be coordinated and leveraged with each other as well as with other public and private programs and funding sources. The vast objectives of the stimulus plan are beyond the scope of any individual policy model. Thus, we seek to support the aims of the stimulus plan by developing a strategy for one policy area that builds a long-term foundation for equitable and sustainable change.

This plan model focuses on reducing energy consumption in buildings (residential, commercial, and public facilities) in order to reduce global warming pollution and to serve economic development and social equity goals. Cutting carbon emissions and other pollution will improve health conditions and reduce negative environmental impacts. We focus on retrofits because buildings are the largest national source of energy consumption, and homes account for the largest share of buildings' energy use. We promote comprehensive planning that recognizes the interlocking goals of greening cities, reducing energy costs for families, creating high quality green careers, and building a lasting infrastructure for an innovative economy. Such an inclusive retrofit strategy must coordinate scientific, business, economic, and community knowledge.

Components of the Plan Model

The Plan Model seeks to do the following:

I. Articulate the framework for deep retrofits and for infusing equity into stimulus-related funds and programs

II. Define the mission for the plan model and justify why the mission is significant

III. Suggest a list of six components for deep retrofits

IV. Supply a comprehensive roadmap of stimulus funds. This includes a diagram of stimulus programs that relate to the deep retrofits of buildings as well as matrices that describe each of these programs in more detail at the federal level and also for four targeted states, namely California, Louisiana, Massachusetts, and New York. *Please note that these diagrams and matrices are works in progress since guidelines and deadlines for many programs have not been released yet.

V. Provide a list of community and organizational assessment questions to help users determine which stimulus funding sources are most appropriate given their contexts and goals. Utilize answers from the assessment questions to point users at "bundles" of stimulus funds that may be appropriate for the users and their existing and potential partners

VI. Describe best practices associated with different components of deep retrofits, especially in relation to the scales at which projects are viewed

VII. Present examples of strategies for civic action and advocacy around stimulus funds and also provide links to other "toolkits" that have been developed around advocating for stimulus funds.

I. FRAMEWORK FOR DEEP RETROFITS & INFUSING EQUITY

Defining Retrofits as a Process

Retrofits are typically defined as interventions that reduce a building's carbon footprint including insulation and air sealing; window and appliance replacement; lighting replacement; and the installation of new heating, cooling, and hot water systems. While simple retrofits implemented at the building envelope level can improve energy efficiency and create short-term jobs, they miss critical opportunities. Only *deep* retrofits can coordinate energy upgrades with solutions to other safety hazards or deficiencies in buildings; link the building stock to the broader infrastructure; maximize gains on a neighborhood scale; and target improvements according to community needs. Moreover, the complex work and large-scale changes required by deep retrofits provide wide-ranging green job opportunities in design, manufacturing, marketing and outreach, construction, and installation. By coordinating the various aspects of the energy landscape and training a workforce that can continue to innovate in retrofits of the built environment, a far-reaching approach to energy efficiency improvements best maximizes long-term energy improvements.

While many retrofit initiatives already focus on how to technically achieve certain energy efficiency goals, we also focus our plan model on the actions required to practically achieve desired economic, environmental, and social equity outcomes. This process-oriented approach highlights the greater potential of retrofits to reduce energy usage and costs at not only the building but also neighborhood, municipal, and regional scales. In addition, examining the synergies between separate technical processes reveals how to leverage these efforts to stimulate local manufacturing industries, create high-road employment opportunities, develop small businesses, and build community based movements.

Our vision of the retrofit process begins at the individual building scale. Interventions to increase the energy efficiency of existing building stock often require tearing down walls, which is often an expensive and intrusive process. Given the disruption of these green efforts, other important improvements to the same housing stock should be made concurrently. Lead and asbestos abatement, disability-friendly adjustments, and broadband and smart grid installations are critical upgrades needed in many buildings, especially in poor, urban communities. Increasing broadband access – another goal of the stimulus plan – is particularly critical because poor residents have the least connection to this technology, but are most in need of better access to current educational and economic development opportunities. Coordinating these various efforts requires a general contractor rather than simply relying on companies with expertise in narrow definitions of energy efficiency retrofits.

Even with the coordination of multiple upgrades, an energy efficiency effort conducted at the individual building scale represents a piecemeal approach that misses greater opportunities. Community based planning can improve the retrofit process along several fronts. First, coordinating homes across a neighborhood can attract larger scale and higher quality contractors with the capacity to efficiently implement more extensive improvements. Community level contracts can increase local purchasing power and guarantee businesses adequate demand. Second, an integrated approach led by community groups considers how to organize for neighborhood improvements that most help local residents with their limited funds. In contrast, current

approaches are focused on the mechanics of retrofitting individual buildings, but are silent on how to use the broad array of stimulus funds strategically in communities. They fail to incorporate participation of key actors in the planning process or even scrap the planning process altogether in favor of narrowly conceived project management. Finally, a larger, comprehensive vision develops systems for neighborhoods that link residential and commercial buildings to each other and a broader infrastructure. Public facilities such as schools, hospitals, public housing, and waste stations can host green projects that benefit their entire communities.

Integrated planning must consider not only the neighborhood but also regional scale in its scientific and industrial efforts. The retrofit process begins with building technology innovations that can reduce energy usage. Research in green retrofitting must respond to local variation in climates, materials, and energy needs by pursuing a variety of regionally specific technologies and planning strategies. This regional approach offers the added benefits of lower monetary and environmental transportation costs and the opportunity for regional economic development. Specifically, regional industrial capacity can be expanded through the local manufacturing of these new technologies. Experts should research how to best link the science of retrofits to successful and equitable regional economic development strategies.

Need for Equity

Efficiency in reaching carbon reduction goals cannot be achieved without equity—ensuring that all communities help shape, participate in and benefit from sustainability efforts. If invested properly, stimulus investment in retrofits can be a first step toward making cities more ecologically sustainable while creating opportunities for broad inclusion, wealth creation, and ongoing citizen mobilization to ensure long-term government commitment to equity goals.

Myriad public policy goals necessitate prioritizing equity and the needs of poor communities in stimulus expenditures devoted to energy efficiency. 1) Energy efficiency improvements can make the most significant gains in poor black and Latino communities that comprise the oldest and least efficient building stock. 2) These residents are a natural constituency for conservation and efficiency, because they can least afford to waste water, energy, or materials. Utility reduction functions as a built-in income generation program for these communities. 3) Poor communities have high concentrations of extremely vulnerable populations, such as disabled and impoverished elderly, who can be assisted during a retrofit process. Renovations such as making homes disabled-friendly can avoid placement of residents in institutions with high relative costs. 4) Black and Latino neighborhoods are experiencing an explosion in diabetes and other diseases linked to the absence of fresh vegetables and healthy food. Reclaiming land and rooftops for urban cultivation and other agricultural innovations are most important for poor communities.

Stimulus expenditures will also have the greatest economic impact in poor neighborhoods. The housing market and current economic crisis are threatening poor residents in two directions. Predatory loans are seven times higher in black neighborhoods, and foreclosures are similarly distributed. Focusing retrofits on homes with mortgage problems helps reduce costs and further collateral damage. At the same time, unless policies are put in place to avoid displacement and the aggravation of poverty, the poor are most likely to get gentrified out of housing located close to mass transit as saving transportation costs becomes increasingly important to families. The stimulus

plan also emphasizes quality green job creation. Communities with high unemployment and poverty need well-paying jobs and job training the most. Workforce development with accessible career ladders not only helps individuals but also reduces spin-off costs from unemployment and poverty.

II. MISSION

In response to the goals of maximizing the impact of the stimulus, accomplishing deeper retrofits, and infusing equity into all aspects of strategy development and implementation, we have developed the following mission goals for the utilization of stimulus funds.

Broad Mission Goals

- **Encourage comprehensive community-based planning**
    - Why: Communities are more likely to participate if they are involved in the decision-making process. Many innovations require a high amount of community education and input
- **Build community capacity & improve community resilience**
    - Why: Low-income communities generally have the least resources in times of economic recession. Improving the capacity of low-income communities to act on their own behalf will help to blunt the negative effects of economic downturns and will also support communities in seizing positive opportunities.
- **Leverage existing funding sources with each other and with private investment**
    - Why: Leveraging sources will increase multiplier effects, create synergies, and help to capitalize on the short-term stimulus to provide infrastructure for long-term projects and programs.
- **Perform "Deep" Retrofits on buildings in low-income communities of color**
    - Why: These communities tend to reside in areas with the worst building stock. "Deep" retrofits deliver the greatest "bang for the buck" and helps to increase savings for communities
- **Reduce global warming pollution**
    - Why: Cutting carbon emissions and other types of pollution will improve health conditions for all people and reduce negative environmental impacts.

Specific Mission Goals

- **Increase Equitable Access to Resources & Opportunities**

    - **Conserve resources (i.e. Materials, waste water, energy, etc)**
        - Why: The poor can least afford to waste resources. Taking action on conservation is a built-in income generating program with multiple positive spin-off effects
    - **Ensure convenient access to healthy foods**
        - Why: Low income people are experiencing spike in diabetes and other nutrition related diseases and access to healthy foods would be critical to reverse this trend and to promote preventative care. This will increase community health and resources while reducing the need for costly health procedures down the line.
    - **Green public facilities (schools, hospitals, public housing, waste stations)**

    - Why: They tend to be located in low-income areas and greening them could produce opportunities for improving facilities, creating local businesses (cooperatives, private, non-profits) and maintaining community level systems (energy, food, water)
- **Increase broadband access**
    - Why: The poor have least access to broadband and are most in need of 21st century education and economic development opportunities
- **Prioritize the needs of disabled and impoverished elderly and children**
    - Why: Poor communities have high concentrations of these vulnerable populations, which need additional help during the retrofitting process and other "greening" processes. This can also avoid placement in institutions such as nursing homes, which have very high relative costs

- **Create & Train for Well-Paying Jobs & Local Economic Development**

    - **Create jobs, training opportunities, and career ladders for communities with high unemployment and poverty**
        - Why: This creates a self-help system for communities and reduces spin-off costs from unemployment and poverty
    - **Build sustainable economic development by supporting and investing in minority and women-owned businesses**
        - Why: Such businesses tend to encourage entrepreneurship in and capacity-building for under-resourced communities and can be "next steps" on green jobs career pathways.

- **Invest in Measures to Aid Communities in Addressing Prohibitive Costs of Adaptation**

    - **Retrofit homes in neighborhoods with high foreclosure problems**
        - Why: Such retrofits will help to reduce cost to homeowners and prevent further foreclosures
    - **Prevent displacement of low-income residents by maintaining housing and cost-of-living affordability**
        - Why: Saving energy and transportation costs is increasingly critical in ensuring low-income communities are not displaced from their neighborhoods

III. COMPONENTS OF DEEP RETROFITS

A coherent vision for maximizing the benefits of green retrofits must jointly address six critical and interrelated elements:

1. Infrastructure: Energy efficiency improvements are driven by scientific advances targeted to work with the natural environment. Retrofits require an informed and context-sensitive choice of technology and materials at the building level. More broadly, buildings are one component of the built environment, and retrofits will be most helpful when working with other elements of the infrastructure, including smart grid and water management systems.

2. Employment: The scale of work introduced by the stimulus plan will require a huge commitment of labor throughout the country. The need for new labor and workforce development introduces great challenges and potential. Equitable retrofits can contribute to the economy through credentialed training programs, broad labor-community-business consensus on job access and performance, and the design of inclusive labor standards.

3. Business model: Existing businesses do not have the capacity to implement the programs funded by the stimulus plan. To translate retrofit plans into reality, both large and small businesses will need to expand. Small business development requires new, sustainable business models that ensure high quality work while being able to generate enough demand for the work in order to have the business remain viable.

4. Financing: Leveraging existing funding sources with each other and private investment will create programmatic synergy while increasing the multiplier effect of the stimulus plan. In addition, innovative financing models can capitalize on the short-term stimulus funds to provide the infrastructure and seed funding for long-term projects and programs that can be sustained without emergency pools of government money.

5. Community planning: Communities are more likely to participate in energy efficiency efforts if they are involved in the preliminary decision-making process. Moreover, many innovations will require extensive community education, input, and cultural shifts. Thus, an optimal retrofit plan will include high community involvement in project design; advanced leadership training for key local actors; and additional support for consumers and the public through public policy and regulations.

6. Coordination: Large-scaled retrofit programs are both extremely attractive social projects and enormously complex. Thus, their execution requires extensive coordination. This entails 1) high-performance contractor and supply chain networks, 2) comprehensive planning and operations management that include the efficient targeting, sequencing, and marketing of projects, 3) a regulatory environment that facilitates the implementation of the program, and 4) community organizing to increase public knowledge and demand for retrofits.

IV. COMPREHENSIVE ROADMAP TO THE STIMULUS

Given the mission goals that have been stated in Section III, this section contains a diagram charting stimulus funds that we believe to be the most relevant to these goals. This section also contains matrices that describe each of the programs in more detail, both at the federal level as well as for four states, namely California, Louisiana, Massachusetts, and New York.

Due to the size and nature of these diagrams and matrices (active excel sheets), we have included the address where you can download them here: http://web.mit.edu/colab/resources/index.html

The documents of note are as follows:

- Stimulus Disbursement Diagram (pdf)
- Federally Administered Stimulus Programs (Excel)
- Massachusetts Stimulus Matrix (Excel)
- Louisiana Stimulus Matrix (Excel)
- California Stimulus Matrix (Excel)
- New York State Stimulus Matrix (Excel)
- DOER Fund (pdf)

*Please note that these lists of programs have been developed to be as comprehensive as possible given the mission goals stated in Section III, but they do not include the universe of programs that may be applicable for all stimulus-related goals. Also, **please verify the information in more detail through additional research** when developing proposals since new guidelines and deadlines are constantly being updated for stimulus funds.

V. ASSESSMENT QUESTIONS & PROGRAMS THAT FIT

In order for community-based organizations to maximize the opportunity to access stimulus funds, it is important to evaluate their current capacity and goals, the capacity and goals of potential partners, and the most pressing needs of the communities in which they work. To aid in this process, we have developed an excel tool that allows organizations to answer assessment questions and link those answers to stimulus programs that are a good "fit" for the organization's goals, partners, and community needs.

This tool can help organizations think about synergies that might exist between stimulus programs, including how to coordinate multiple programs to achieve specific goals, strategies for partnering with the public and private sector to maximize funds coming into the community, and knowledge around the capacity needed for base-building organizations to leverage the stimulus.

The Assessment Questions & Programs That Fit Tool can be found at:
http://web.mit.edu/colab/resources/index.html

Please note that these lists of programs have been developed to be as comprehensive as possible given the mission goals stated in Section III, but they do not include the universe of programs that may be applicable for all stimulus-related goals. Also, **please verify the information in more detail through additional research when developing proposals since new guidelines and deadlines are constantly being updated for stimulus funds.*

VI. DESCRIPTION OF BEST PRACTICES

The next section of this model expands on each component of deep retrofits and describes potential approaches to implementing equitable energy efficiency improvements in buildings, neighborhoods, cities, and regions. These descriptions and best practices are meant to be used as guides and inspiration for action, though the specific strategies for the following components will need to be based on the actual contexts and capacities of stakeholders in a given situation.

1. Infrastructure
2. Employment
3. Business model
4. Financing
5. Community planning
6. Coordination

1. Infrastructure

Smart Grid Development

Our current electrical grid is aging and struggling to keep up with increasing demand; unless overhauled, it could jeopardize the United States' ability to compete in the global economy. Other risks to U.S. competition include increased electrical inefficiency, national security concerns, and the consequences of environment and climate change. Nonetheless, this section will focus on the significant national and regional problems associated with an outdated electrical grid, as well as communal costs. An antiquated electrical grid virtually guarantees inefficient energy consumption among communities, in addition to a lack of awareness as to how they consume that energy; this results in communities' paying higher prices for energy. To avoid these unnecessary costs and stimulate economic growth, the 2009 American Recovery and Reinvestment Act (ARRA) set aside $4.5 billion for smart grid development, which will be disbursed by the Office of Electricity Delivery and Energy Reliability.

A smart grid is an energy distribution system that embeds information technology throughout the grid to improve responsiveness, reduce power outages, respond to fluctuations in demand, and increase efficiency and manage costs. Smart grids are decentralized energy distribution systems, meaning the energy we consume is produced using small-scale power generation technologies located close to the load being served. Such a system is capable of lowering community energy costs, improving distribution reliability, reducing emissions and expanding energy options. According to the Department of Energy, the U.S. smart grid of the future must perform the following seven tasks: 1) be able to heal itself, 2) motivate consumers to actively participate in operations of the grid, 3) resist attack, 4) provide higher quality power that will save money wasted from outages, 5) accommodate all generation and storage options 6) enable electricity markets to flourish, and 7) run more efficiently.

The ARRA funds will support implementation of the Smart Grid programs authorized by the Energy Independence and Security Act of 2007. These programs include Smart Grid technology research and development, with funds distributed through a competitive grant process. As directed in the Act, funds will also support increasing the workforce, resource assessment and analysis of future demand and transmission requirements, and development of interoperability standards critical to effective and consistent application of smart grid technologies.

While there are no specific limitations to the type of recipients, based on the criteria for a qualifying investment in smart grid functions, many of the successful applicants will be utilities companies. Some manufacturers could also apply: for example an appliance manufacturer might apply for a grant to redesign their product line in order to incorporate smart grid capability. Funds may also be awarded to state and local governments. Furthermore, universities, national labs, and technology companies - perhaps in partnership - are likely to pursue some of the opportunities. While the funds will not go directly to the consumer, the consumer will benefit from the improvements to the grid, and from the job growth associated with the initiatives.

Retrofitting the energy grid can benefit communities in a number of ways. First, the Smart Grid connects to consumers through price signals and smart appliances, reducing the need for some of our current energy infrastructure while keeping electricity reliable and affordable. As noted, during episodes of peak demand, stress on the grid threatens its reliability and raises the probability of widespread blackouts.

By enabling consumers to automatically reduce demand for brief periods through new technologies and motivating mechanisms like real-time pricing the grid remains reliable. For example, real-time pricing refers to energy prices set for a specific time period on an advance basis that may change according to price fluctuations in the market. Early warnings alerting the cost of consumption during these time periods allows customers to vary their usage in response to prices, managing their energy costs by shifting usage to a lower cost period, or reducing consumption overall. Consequently, consumers are compensated for their help. Increased consumer participation also provides tangible results for utilities which are experiencing difficulty in siting new transmission lines and power plants. Ultimately, tapping the collaborative power of millions of consumers to shed load will significantly curtail the need for new infrastructure at any cost. Instead, utilities will have time to build more cost-efficiencies into their siting and building plans.

Smart Grid technology and dynamic pricing gives consumers the opportunity to see what price they are paying for energy before they buy – a powerful motivator toward managing their energy costs by reducing electric use during peak periods. Presumably, increased awareness of energy use will result in consumers' desire to be more engaged and will ultimately provide the grid with greater flexibility.

Boulder, Colorado is set to become the first U.S. city with a smart grid. The local utility, Xcel Energy, has upgraded much of the city's network and is in the process of installing new meters that also will give customers and the utility more information about how and when energy is used. Soon, Boulder customers will be able to log onto Gridpoint.com, a website that will allow them to change settings for their appliances while at work or away from home. Xcel will also be able to tap into electricity stored in customers' plug-in electric vehicles during periods of peak demand.

Link:
http://smartgridcity.xcelenergy.com/story/index.html

More information on Smart Grid development and the dispersal of ARRA funds for its development can be found at the following links:
http://www.oe.energy.gov/smartgrid.htm
http://www.oe.energy.gov/information_center/american_recovery_reinvestment_act.htm

Broadband Expansion

The term "broadband" generally connotes fast, reliable access to the internet by means of fixed and (increasingly) mobile communications devices (e.g., computers, laptops, PDAs, phones).
The U.S. Congress has appropriated $4.7 billion to establish a Broadband Technology Opportunities Program, which would grant awards to eligible entities to develop and expand broadband services for unserved and underserved areas, as well as improve access to broadband by public safety agencies. Of these funds, $250 million will be available for innovative programs that encourage sustainable adoption of broadband services; at least $200 million will be available to upgrade technology and capacity at public computing centers, including community colleges and public libraries; $10 million will be a transfer to the Office of Inspector General for the purposes of BTOP audits and oversight. Up to $350 million of the BTOP funding is designated for the development and maintenance of statewide broadband inventory maps.

The National Telecommunications and Information Agency (NTIA) is responsible for allocating $4.7 billion set aside for the Broadband Technology Opportunities Program. The majority of these funds will be distributed as grants to states, state agencies, municipalities, non-profits or private companies. The grants may be used for a wide variety of purposes:

(1) Equipment purchases (including software)
(2) Construction / deployment of broadband service related infrastructure
(3) Ensuring access for a "community anchor institution"
(4) Facilitate access to low-income, unemployed, aged and other vulnerable populations
(5) Improve public safety

The primary goal is to increase mobile and fixed broadband service to "unserved" and "underserved" areas, providing "the greatest broadband speed possible" in those areas. These terms have not yet been defined, but are the subject of multiple conferences taking place in March / April 2009. By statute, grant applications will be judged based on:

(1) Increasing number of users
(2) Speed enhancement
(3) Improve health care delivery, education or service for children

The grant cannot result in "unjust enrichment" (i.e., no "double-dipping" with other federal communications enhancement programs, in contrast to energy programs).

At least one NTIA grant must be awarded to each state, and each state (or entities therein) can apply for more than one.

A secondary goal of the BTOP is to stimulate demand for broadband services:

(1) $250M to encourage sustainable adoption of broadband
(2) $200M to facilitate access to broadband for low income individuals
(3) $350M for data collection (i.e. mapping)

The Rural Utility Service of the Department of Agriculture, is allocated $2.5 billion for providing grants / loans to "rural areas without sufficient access to high speed internet service."

The above-quoted term has not been defined, but the legislation requires that 75 percent of the area to be served must be a "rural area" as defined by the U.S. Bureau of the Census. Priority will be given to applications:

(1) For broadband systems that will allow end users to have a choice of more than one service provider
(2) To projects servicing the highest proportion of rural residents
(3) To borrowers or former borrowers under Title II of the Rural Electrification Act of 1936

Applying for Broadband Grants Through the NTIA

The American Recovery and Reinvestment Act's Broadband Initiative allows two entities to distribute broadband funding: the U.S. Department of Agriculture's Rural Utilities Service (RUS) program and the U.S. Department of Commerce's National Telecommunications and Information Administration. The basics for applying for NTIA grants are outlined below.

In March, the NTIA posted a notice in the Federal Register asking for feedback on the Broadband Technology Opportunities Program. After collecting comments for 30 days, NTIA will issue a Notice of Funding Available, or NOFA. This notice will contain final application rules, which are required before any grant funding may be distributed. It is expected that the agency will issue three NOFAs in order to provide enough time for states and others to complete their applications. NTIA is working on a very short deadline, since they are required to disperse all funding by September 30, 2010. The first of three notices for funding will likely be released in the April-June timeframe. It is expected that the second window would be in the fall and the last would be in spring of 2010.

NTIA plans to award funding through BTOP's four major areas: broadband mapping, general broadband, community computing and innovative applications. Eligible broadband grant applicants include any state, local, territorial or tribal government, as well as non-profit organizations. It is also possible that ISPs, infrastructure providers, and other for-profit ventures may be eligible if they can prove it is in the "public interest," a term yet to be defined. Bernadette McGuire-Rivera, the Associate Administrator of the NTIA, has acknowledged that many people are concerned about the definitions of "unserved" and "underserved" areas. Her agency will be collecting public comments in order to address this, as well as a myriad of other questions and concerns.

The rule-making process will be critical, since questions remain about eligibility and grant distribution priorities. No applications will be accepted by the NTIA until grant criteria is established and rules are adopted. That said, McGuire-Rivera recommends that people begin working on their applications now.

Applicants must demonstrate how their project would efficiently use grant money for fulfilling the program's goals. They must also show that they would be able to complete the project, and provide at least 20 percent of its costs. In addition, applicants must demonstrate that a given project would be impossible if they did not receive a BTOP grant before September 2010. Applicants are encouraged to be concise with both their public comments and applications. Finally, although there are some restrictions, an applicant can apply to both the NTIA's BTOP program as well as the USDA's RUS program.

Additional information regarding broadband expansion can be found at the following links:
http://www.ntia.doc.gov/broadbandgrants/index.html
http://usasearch.gov/search?input-form=simple-firstgov&v%3Aproject=firstgov&query=Broadband+Grant+Application&affiliate=commerce.gov&x=39&y=3

Weatherization As One Component of Deep Retrofits

Weatherization Assistance Program: Technologies and ARRA Funding

The American Recovery and Reinvestment Act of 2009 has allocated $5 billion to the Department of Energy's Weatherization Assistance Program. Weatherization services are cost-effective energy efficiency measures for existing residential and multifamily housing with low-income residents. Under this definition, it includes a wide variety of energy efficiency measures that encompass the building envelope, its heating and cooling systems, its electrical system, and electricity consuming appliances. In other words, the full range of energy efficiency measures in buildings that apply to all homes and apartment buildings is included in weatherization technologies.

On the other hand, the Weatherization Assistance Program serves low-income families free of charge and limits according to federal rules the amount of money that can be spent on any single residence. (The average expenditure is $6,500.) As a result, only the most cost-effective measures are included in the upgrade of a particular home. This constant pressure for low-cost energy savings has become the trademark of weatherization and distinguishes it from the larger home retrofit industry. Still, in this way the Weatherization Assistance Program can begin helping underprivileged communities by retrofitting their homes, thereby increasing their energy efficiency, decreasing power consumption, and curtailing their energy costs.

Another distinguishing feature of weatherization is attention to all-around safety check. Many buildings receiving attention are old and in need of repair. Weatherization service providers check major energy systems to ensure occupant safety.

Increasingly, weatherization service providers look at the house as a system under the concept of "**whole-house weatherization**." In recent years, weatherization providers in many states have begun to combine resources from other programs to address other needs of their clients. These activities grow from the recognition that weatherization serves many vital roles in low-income communities and is called Weatherization Plus.

This holistic approach to weatherizing buildings incorporates a host of technologies aimed at sealing building envelopes, therefore increasing energy efficiency. These include:

- National Energy Audit Tool
- Insulation
- Blower Doors
- Air Sealing
- Windows
- Heating
- Water Heaters
- Air Conditioning and Warm Climate Weatherization Measures
- Electrical Appliances and Weatherization Base Load Measures

Information describing these technologies can be found at:
http://apps1.eere.energy.gov/weatherization/wx_technologies.cfm

However, currently existing funds for weatherization are probably *insufficient* in addressing deeper retrofit needs such as asbestos and other hazardous materials abatement. It should be the goal of any comprehensive retrofitting strategy in low-income neighborhoods to discover innovative measures of funding such "hard to fund" retrofits since these neighborhoods tend to have older housing stock with more environmental hazards.

Energy Generation

Combined Heat and Power

Combined heat and power (CHP) is a way of generating electricity that is significantly more efficient than conventional generation. CHP systems come in a variety of sizes, and are an attractive option for urban areas that need to develop more electricity generation but have difficulty citing larger plants. Sites amenable to CHP development are found throughout Central Brooklyn. Large campus settings, such as colleges and hospitals, of which there are several in Central Brooklyn can accommodate large CHP systems, high-rise commercial office buildings can accommodate mid size CHP systems, multifamily residential buildings, supermarkets, and hotels can accommodate small CHP systems; and single family residences may accommodate Micro-CHP systems.

Example of Financing Combined Heat and Power in New York

The New York State Energy Research and Development Authority (NYSERDA) has several programs set up to help finance CHP development, making it a much more attractive opportunity. A pension fund could work with a community partner to finance a community owned CHP plant that sold energy back to the grid. A system could be designed where residents were given incentives to curtail their energy use, and shared in the revenue generated by selling excess electricity back to the grid.

2. Employment

Coalitions should be built between labor, business, community, and educational institutions. Most "green jobs" do not require four-year degrees. They include electricians retrofitting buildings, lab technicians ensuring quality control in biofuels plants, machinists making wind turbines, and technicians to maintain them. There are many "middle-skill" jobs available. However, this is not to say that green jobs programs should only be thinking about encouraging workers to remain in these "middle-skill" jobs forever. There needs to also be career ladders that contribute to wealth generation for individuals. This could mean that a person who enters as a solar panel installer is provided with opportunities for an apprenticeship to become a certified electrician and even opportunities for entrepreneurships as "next steps" in the career ladder.

In order to promote good, green jobs with career ladder opportunities, there are a variety of interventions that we recommend.

Ensure that green jobs are "good jobs" for individuals, families, and communities. Jobs need to be "family-sustaining" and accessible to people who need them the most, such as low-income communities of color. High job quality, strong access for all, and potential for upward mobility should be high priorities in any green jobs program. Promote and require community benefits when awarding contracts and generating green jobs. Build and invest in "bridges," or pre-apprenticeship and work-readiness programs. Bridges are additional skills that workers may need to be job-ready. These skills may include problem-solving, math, and English proficiency. Create green "ladders" that provide pathways to good jobs that bring individuals and communities out of poverty

Plan carefully using updated labor market data and analysis alongside community assessments in order to develop appropriate scale and types of programs. Prioritize specific sectors within "green jobs" that are most relevant to the local area instead of trying to train people for jobs that do not exist and probably will not exist in the foreseeable future. Policy should be changed in order to encourage stricter energy standards as a way to create demand for green jobs. Seek and analyze accurate data to measure market opportunities as well as skills gaps in the targeted population. Assess green jobs programs and always strive to improve their quality. Analyze data and establish clear standards and certifications for the types of skills and competencies that green jobs programs participants should be trained for. This standardization of criteria based on best practices will help to address the uncertainty and risks currently associated with training programs and certifications that may or not be recognized as valid in the field. Also, these standards may be locally or regionally-based considering the environmental, economic, and social contexts of places can vary greatly from place to place.

Develop sustainable green job creation and retention models through partnerships. Develop thoughtful links between workforce development, economic development, and community development. Partnerships should help to create, support, and sustain green jobs. Green industry clusters (manufacturing, energy generation, etc.) should be encouraged, therefore bringing additional career ladder opportunities for residents in a concentrated geographic area. Green jobs initiatives should create new jobs and also help to maintain existing ones. Utilize intermediaries that can act as decision-making and bridging bodies between industries, union groups, community based organizations, community colleges, and residents so that workforce supply, demand, training,

support, and innovations can be responsive to real-life economic, environmental, and social conditions. Integrate green jobs programs into existing workforce systems instead of trying to start from scratch

Generate green jobs by investing in entrepreneurship and business ownership in low-income communities. Invest in locally-based entrepreneurs and minority and women-owned businesses, which will help to increase the likelihood that investments remain and are leveraged in local communities and that hiring will occur locally in the low-income community. This requires that existing workforce training, referral, and retention systems may need to evolve in order to better accommodate the green jobs strategies of creating family-sustaining jobs with accessible and clear upward mobility into management and ownership positions.

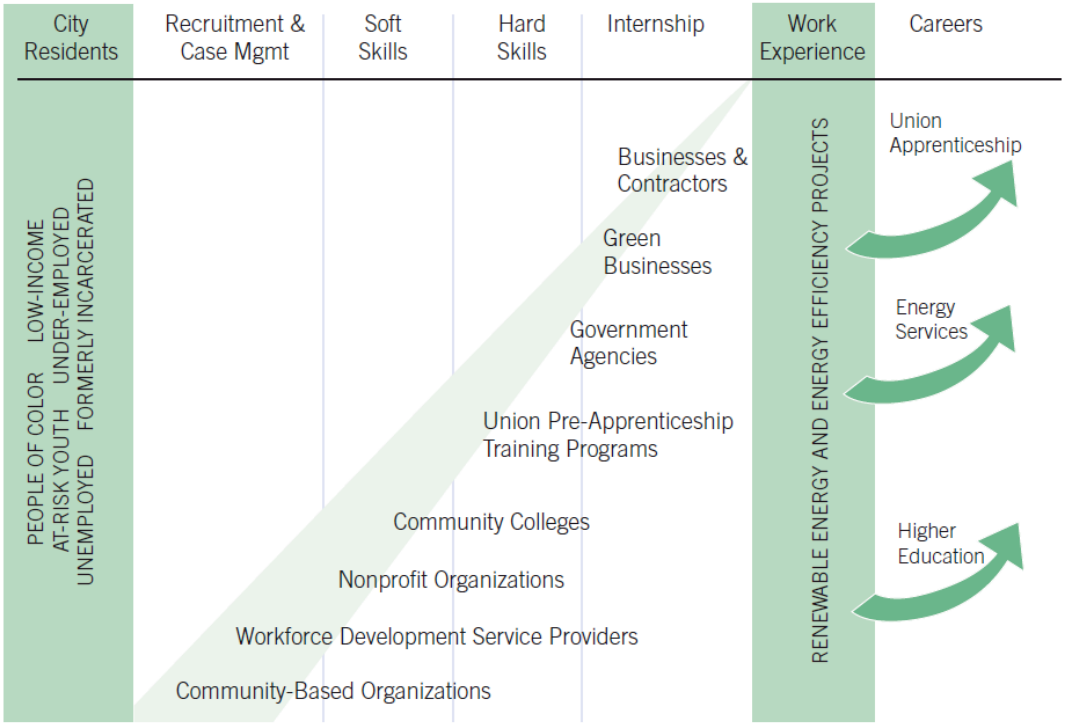
Think and act regionally. Many sectors in the green job economy require coordination and policies targeted at the regional level and not just at the municipal level. For example, many construction companies operate on a regional scale and not just a municipal scale. Manufacturing strategies often need to address regional needs instead of just local needs in order to be productive at scale. Green jobs programs need to also adapt a regional perspective of how different training programs can complement each other within a region. This may mean that specializations may occur within one or two workforce training programs that become regional attractions instead of trying to create homogenous cookie-cutter programs throughout the region that may unnecessarily replicate services and reduce resources that can be invested in other specializations.

Build on existing programs at union pre-apprenticeship and apprenticeship programs, technical colleges, workforce development service providers, *and* community organizations and embed green skills training into existing curriculum. This way, all sectors can benefit from "green" opportunities, and resources do not have to be spent inventing, investing into, and implementing new programs. For example, many jobs in the weatherization and retrofitting sectors require traditional construction skills along with some updated skills for energy-efficient construction. Solar installation and maintenance requires that workers be well-versed in traditional electrical theory and practice. In the same vein, wind turbine manufacturing requires machinists and technicians to use some traditional manufacturing skills alongside specialized training for wind turbine production. Granted, there will be some innovative jobs that may require completely new programs, but most green jobs can be developed through changing and renovating existing programs

Utilize a broad range of public and private investments in order to sustain green jobs programs. Green jobs programs should utilize funds targeted for economic development, workforce training, housing development, environmental preservation and mitigation, research and development, youth development, infrastructure upgrading, and community development. Similar to embedding "green" into a broad range of existing curriculum, it is also important to embed the concept of "green jobs" into a broad range of existing funding and development strategies.

Green Jobs Corps: Connect the stakeholders to create pathways out of poverty

A conceptual diagram—programs will vary.



18 | Green-Collar Jobs

Source for Graphic: http://www.cows.org/pdf/rp-greencollarjobs.pdf

Sources:
http://www.cows.org/pdf/ex-greenerpathways.pdf
http://www.cows.org/pdf/rp-greencollarjobs.pdf
http://www.cows.org/pdf/rp-GreeningWisconsin.pdf

3. Business Model

Getting Started

Several elements are necessary to build a sound foundation for a new business. Before trying to secure financing, a new business should have strong management in place with a clear business plan and a financial plan. Local Small Business Development Centers (SBDC) and other business development organizations can help entrepreneurs get the skills and information they need to get their businesses off to a good start.

SBDC services include, but are not limited to, assisting small businesses with financial, marketing, production, organization, engineering and technical problems and feasibility studies. The SBDCs also make special efforts to reach minority members of socially and economically disadvantaged groups, veterans, women and the disabled. Assistance is provided to both current or potential small business owners. They also provide assistance to small businesses applying for Small Business Innovation and Research (SBIR) grants from federal agencies.[1]

Common Challenges

Two common challenges for small, construction contractors are securing financing and bonding. To meet the strict requirements of bonding through surety companies, a contractor must have a strong banking relationship, all requisite licenses and certifications, a solid work history and a sound record-keeping system.

Nonprofits, foundations and community development finance institutions (CDFIs) have developed some creative ways to move contractors beyond these hurdles.

Growing Capacity: Financing

While many contractors self-finance their work through credit cards and cash, without strong credit and a bank relationship these businesses are often unable to grow beyond residential and small commercial projects. Building a strong credit score can take years, so it is advisable for contractors to begin financing projects with small loans that they can easily pay back, and then build up to larger amounts as the size of the projects they bid on grows.

Since banks have traditionally been reluctant to lend to smaller businesses, the federal Small Business Administration has created several programs to encourage banks to make these types of loans. For instance, the SBA 7(a) Community Express program guarantees up to 85 percent of loans up to $25,000 with no collateral requirement for qualifying small businesses. These businesses are required to receive technical assistance to help ensure their success. For more information, visit http://www.sba.gov/services/financialassistance/basics/index.html.
Loan guarantee programs also exist in many states.

A Community Development Finance Institutions (CDFI) is a specialized financial institution that works in market niches that are underserved by traditional financial institutions. CDFIs provide a unique range of financial products and services in economically distressed target markets, such as mortgage financing for low-income and first-time homebuyers and not-for-profit developers, flexible underwriting and risk capital for needed community facilities, and technical assistance, commercial loans and investments to small start-up or expanding businesses in low-income areas. CDFIs include regulated institutions such as community development banks and credit unions, and non-regulated institutions such as loan and venture capital funds.[2] Local CDFIs are another potential source of lending for small contractors.

[1] From http://www.sba.gov/localresources/district/ma/counselingt/ma_sbdc.html
[2] From http://www.cdfifund.gov/what_we_do/programs_id.asp?programID=9

Growing Capacity: Procurement Assistance

In order to help small contractors learn about new bid opportunities, some states offer "procurement assistance" programs that inform contractors of new public projects at the federal, state and local level. In Louisiana, the Louisiana Procurement Technical Assistance Center (LA PTAC) guide contractors through governmental red tape and paperwork from start to finish. The counselors "provide one-on-one counseling for identifying contracting opportunities, reviewing bidding opportunities, preparing proposals, contract implementation and administration". LA PTAC maintains a database of contractors with details such as the equipment owned and their availability, so that when projects, subcontracting or set-aside opportunities arise, the database allows LA PTAC to alert the contractor by email or phone to possible matches they might able to bid on.

Minority businesses owners can pursue networking opportunities through the Department of Commerce's Minority Business Development Agency, http://www.mbda.gov/?section_id=16.

Case study: New York City School Construction Authority's Mentor Program

The New York City School Construction Authority (NYCSCA) recently created a Mentor Program for small, DBE contractors. The contractors bid on projects between $80,000 and $750,000 that are supervised by a Construction Manager. Bonding is not required. After four years in the mentorship program, successful firms can bid on larger projects from $750,001 to $1 million that are unsupervised. These jobs require bonding.

To qualify for the program, a contractor must have two commercial contracting references for jobs that cost at least $25,000 each and have been in business for over one year. Average gross sales must be under $2.1 million over the past three years and the firm must have bonding capacity under $1 million. Once a firm is certified, it must contact the construction managers and formally request work. The program includes "fast track payment systems" and access to working capital and bonding.[3]

Growing Capacity: Break Up Large Contracts

Besides working as a subcontractor to a larger, more established primary contractor, small contractors can gain access to opportunities through the unbundling of large contracts. By breaking a big contract into separate projects, the federal government, state agency, or other contract administrator, can remove most of the financial barrier that prevent small contractors from bidding.

In 2002, the federal government issued a strategy to eliminate unnecessary contract bundling, and mitigate the effects of bundling with subcontracting plans in order to increase opportunities for small businesses to access federal contracts.[4] This process varies from state to state, depending on local regulations. For example, in Massachusetts, the state law is much stricter than the federal law and contracts are unable to be unbundled. However, case studies from Seattle and San Diego illustrate alternative ways local government and nonprofit developers have worked to expand opportunities for small contractors.

[3] New York City Department of Education.
[4] Emory 2002.

Case Study: Seattle's Small Construction Projects Roster

In 1998, voters in Washington State passed Initiative 200 -- banning preferences for women and minorities in state and local government. The state responded by allowing local governments to create Small Works Rosters. Contractors apply to be added to the list and are notified when projects under $200,000 are up for bid. These projects are not publicly advertised; instead, city project managers decide whether the bid is sent to three, five or all contractors on the list.

Seattle's Small Construction Projects Roster requires contractors to complete an online application and have a valid Washington State Contractors License. Contractors register under categories that describe their trade, and are required to describe three completed projects that demonstrate their ability to perform work specific to each category they select.

For projects estimated to cost less than $35,000, the City may limit the solicitation to small businesses whose gross annual revenues fall below $250,000 or $1,000,000. The City may also waive the retainage withholding and Payment and Performance Bond requirements for smaller projects. Under all other circumstances, payment and performance bonds are required as is insurance and payment of the prevailing wage.[5]

A program such as Seattle's could improve small contractors' access to public projects without requiring the involvement of a larger firm. The most obvious risk of this program is that by reducing bidding requirements, it opens these small bids up to cronyism that may have been weeded out by a more thorough, public solicitation process. This has been a challenge in Seattle, but it seems that better program design and oversight could minimize this risk while opening up opportunities to small contractors.

Case Study: Market Creek Plaza, San Diego

In San Diego, the Jacobs Center for Neighborhood Innovation eschewed using primary contractors to build Market Creek Plaza, a 20-acre commercial development, in order to focus on building community assets. A team of neighborhood residents selected the subcontractors. Bonding was not required, and at times the Jacobs Center co-signed for loans so that capable subcontractors could take on big projects. In order to make sure the development created local jobs, the Jacobs Center was willing to be flexible with subcontractors. Sometimes they ran weekly payrolls, in other situations they helped the contractors buy insurance. Various community organizations identified and trained contractors to bid on the project. A Mentor-Protégé program developed by the Multi-Cultural Contractors Group helped contractors find financing and bonding for their subsequent work.

Out of a total of cost of $23.5 million, minority and women-owned contracting companies received 74 percent; 40 percent of workers were hired locally (within the project's zip code). While the project was risky and required a lot of management, only one subcontractor had to be removed, and another subcontractor issue resulted in litigation. In a conversation with Charles Davis, a project manager with the Jacobs Center, he stressed that, "the subs are where all of economic development comes from because they do the hiring."

[5] Seattle Department of Executive Administration.

Building Capacity: Bonding Assistance

Bonding presents the most difficult hurdle for small contractors to overcome. Without it, contractors limited to bidding on state and federal projects worth under $50,000, and home improvement projects that do not require bonding.

Despite a contractor's experience and the market's demand for contractors, larger, public contracts will remain out of reach until the contractor's credit score is satisfactory and he or she has the working capital to obtain a bond. Community and business development organizations can help contractors manage this process by directing them to existing assistance programs, and negotiating small bonding requirements for contracts that may not otherwise require them (e.g. with nonprofit housing developers).

Summary: Steps to Growing Contractor Capacity

Step 1: Start repairing credit score
Step 2: Apply for licenses and certifications
Step 3: Participate in trainings on management skills and business education to increase capacity for obtaining financing and bonding
Step 4: Obtain a small contract that requires bank financing
Step 5: Obtain medium-sized contract in order to build experience, cash on hand, and credit history. Ideally, this project would require a small bond.
Step 6: Identify bid opportunities for larger projects
Step 7: Establish a relationship with a surety bond producer to get pre-qualified
Step 8: Bid on large project

Resources

PolicyLink, Minority Contracting,
http://www.policylink.org/EDTK/MinorityContracting/default.html

4. Financial Models

Innovative financial models can produce revenue streams for community organizing through stimulus retrofitting programs. Such sustained financial support can help local voices define local sustainability goals, shape supportive policies and aggregate demand, and thereby induce markets to effectively respond. This approach addresses a longstanding dilemma of generating financial support for strengthening movement-building and civic participation in low-income and minority communities while overcoming the fundamental weakness in existing approaches to residential retrofitting that provide no mechanisms for aggregating demand.

Current approaches to financing focuses on the individual scale. Property-owners must employ their own capital for the upfront costs of implementing green retrofits. While energy efficiency improvements are cost effective for residents in the long-term because of resulting reductions in utility bills, these upgrades require initial capital costs that can be a major hurdle to implementation.

Federal income tax deductions for energy efficiency retrofits help reduce these initial costs, as well as incentives for rebates on appliances and other highly energy efficient supplies. Similar tax incentives for developers, particularly of low-income housing, can also facilitate these changes at the building scale.

Community Development Corporations (CDCs) offer an investment potential at the neighborhood scale. These groups are community focused and major investors in affordable housing, and are particular helpful because they operate in many poor communities with the greatest need for housing advances. Moreover, CDCs have greater knowledge of local needs, the built environment, and policy opportunities and constraints than many other community groups. Energy efficiency improvements match their housing goals by decreasing the monthly living costs of residents. Thus, CDCs can provide a useful avenue for financing neighborhood-level green retrofits in coordination with other necessary housing improvements.

The Bedford-Stuyvesant Restoration Corporation provides a model for other CDC green retrofit efforts. Their Weatherization Program has dedicated over $20 million to improving the energy efficiency of over 9,000 homes in Brooklyn. The organization is recognized as a major source of retrofitting in New York State, and has linked these improvements to other community goals.

Links:
http://www.restorationplaza.org/index.php?option=content&task=view&id=223&Itemid=162;
http://www.restorationplaza.org/index.php?option=com_content&task=view&id=37&Itemid=13

Investors and financial managers can contribute to and benefit from the economic stimulus plan with the creation of financial mechanisms to provide capital that leverages federal funding. In particular, pension funds can create community access to financial opportunities. Public employee and union pension funds contain trillions of dollars that require responsible investment. Particularly in the current economy, this requires innovative asset allocation beyond traditional stock options. At the city level, municipal employees have the incentive to not only improve their return on investment but also the quality of life in their own municipality. At a regional scale, building trades unions investing in retrofits can also increase the demand for their services by facilitating project funding. Pension funds should therefore provide some of the significant funds necessary to implement energy efficiency improvements at scale.

Utility companies are currently key actors in encouraging residential energy efficiency improvements. They occupy a critical space in the energy efforts because they interact directly with energy consumers. Their position also provides great potential for a new, innovative financing mechanism that would be implemented in conjunction with state agencies. A public or private program administrator provides loans to individuals to conduct green retrofits. These loans are then paid off through the individual's monthly utility bill, which is called on-bill repayment. The loans are affordable to residents, because they can repay the loans with savings from their reduced utility costs. They are attractive to investors because utility bills have extremely low default rates. Successful examples of on-bill repayment exist in Massachusetts, Rhode Island, Connecticut, and California. This top-down financing mechanism requires the coordination of state agencies, utility companies, and a pool of investors providing the initial capital.

A variant of the on-bill repayment model can be enacted at the municipal level. Through its Financing Initiative for Renewable and Solar Technology (FIRST), Berkeley, CA provides low

interest loans for energy efficiency retrofits that are repaid over twenty years on the owner's property tax bill. Berkeley's pilot program currently focuses on solar roofs but is expanding to other types of retrofits. Similar programs are also beginning in Boulder, CO, Babylon, NY, and Palm Desert, CA.

<u>One example of financing options at different scales: Energy Sales in the Forward Capacity Market in NYC</u>

As the amount of electricity demanded in NYC begins to periodically outstrip supply, the entity responsible for balancing supply and demand in New York (NYISO) has taken measures to curtail usage during periods of high demand. These programs pay building owners on a monthly basis for the right to remotely control a certain amount of their electricity usage during periods of high demand. Hot water boilers, and air conditioners can be turned off while local generators can be turned on. The building owners are paid for making this option available and paid again for the electricity turned off during an emergency, or electricity produced by any local generators.

A pension fund could invest in one of the businesses that run these programs with the contingency that they work with a community-based organization to identify buildings in Central Brooklyn that could take advantage of such a program. The investments required as well as the revenue produced would likely be small, but the revenue stream would be sustainable, and were it to achieve wide spread success, could fund any number of community programs.

Links: http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=26580
http://www.scientificamerican.com/article.cfm?id=financing-energy-efficiency-with-taxes

5. Community Planning

Community organizations are the only major actors with the capacity to greatly improve market penetration in hard-to-recruit communities that have no clear incentives to act. Without understanding the significant benefits to the community that can occur through coordinated residential retrofits, community groups currently serve as one major bottleneck to progress. Strategies must change so that affordable housing developers and other key actors begin to approach energy efficiency challenges at the neighborhood level. These goals require a deep base-building effort, making powerful links between progressive community organizations and organized labor in order to sustain progressive activism for the long term.

Community planning can also help to identify and capitalize on synergies between different energy efficiency retrofit programs and other community development programs. For example, many public facilities such as schools, hospitals, public housing, and waste stations are located in poor neighborhoods of color. While these communities were assigned these facilities after other communities successfully blocked them, their location now produces significant opportunities for neighborhood-scale improvements. These facilities sit at the intersection of stimulus money for greening public facilities and retrofitting housing in poor communities. Moreover, they can be leveraged to created local cooperative, private, and non-profit businesses and to maintain community-level infrastructure systems for energy, food, and water.

6. Coordination

Coordination must occur at many different scales of work at the national, state, regional, city, and neighborhood levels. Coordination must also occur between public and private actors as well as intermediaries. This coordination will ensure that funding programs can be leveraged to create jobs and economic stimulus in the near-term, but also to invest into the physical, environmental, economic, and social infrastructure of all communities in the long-term. Please refer to the "Civic Action & Advocacy" section below to gain more strategies on coordinating energy efficiency retrofits at a large-scale.

VII. CIVIC ACTION & ADVOCACY

The American Recovery and Reinvestment Act (ARRA) committed to unprecedented investments in "green" projects. These initiatives, such as the home weatherization program and energy efficiency block grants, provide an opportunity to achieve a triple bottom line of environmental responsibility, economic stimulus, and community development. There is no guarantee, however, that the large amount of funds will be spent in a manner that promotes jobs, job training, and community organization in underserved communities. Civic action is the key to properly investing these funds.

Following the announcement of stimulus funds, some national organizations released toolkits to assist local actors organize for green jobs. The Sierra Club's Cool Cities Initiative and Green For All both recommend strategies for communities to work with their local governments to see ARRA funds properly spent for job creation and community development. In the interest of not replicating work, we have attached links to these toolkits below.

MIT's Community Innovators Lab (CoLab), in conjunction with the Emerald Cities Initiative, is also seeking to catalyze civic action. We are also directly engaging with community, local government, and state level actors. These civic action meetings aim to bring together labor leaders, community representatives, and government to coordinate green retrofits, workforce development, and community representation and benefits.

Effective coordination among these stakeholders can result in large mutual gains. Communities stand to gain jobs and economic development. Unions stand to gain members and increased market share. Local governments stand to benefit from overseeing economic recovery. Everyone stands to gain from environmental benefits. Without the civic participation and cooperation of all these actors, however, individual interests can derail prospects for success. Trust-building activities must develop and, in some cases, repair relations among these groups. Each must see the mutual gains to be made as more valuable than narrow pursuit of self-interest. Together, they must take action to ensure ARRA funds are well-spent towards the triple bottom lines.

Link for Green For All Recovery Toolkit:
http://www.greenforall.org/resources/recoverytoolkit

Link for Sierra Club Cool Cities Activist Toolkit
http://newjersey.sierraclub.org/ConCom/CoolCities/Cool_Cities_Activist_Toolkit_4-4-0623.PDF