CENTER FOR COMMUNITY INNOVATION

A Green Wave of Economic Development in Richmond, California: Evaluating Green Economic Development Through an Equity Lens

By
Jackie Tsou

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Across the country in various municipalities, the merger of two traditionally different fields – economic development and environmental protection - is becoming more popular and practiced. Termed "green economic development," "sustainable development," or "sustainable economy," these types of strategies attempt to find effective solutions to our country's ever-increasing dependency on fossil fuels while simultaneously boosting local economies through "high road" job creation. Increasingly, policy makers, practitioners, and investors alike are finding that green economic development dually promotes environmental protection and increased operation and/or production performance. This paper explores how for Richmond, California this trend could be an opportunity for many reasons, particularly for assuring that benefits to low-income and people of color communities are explicitly safeguarded.

Executive Summary

Across the country in various municipalities, the merger of two traditionally different fields – economic development and environmental protection - is becoming more popular and practiced. Termed "green economic development," "sustainable development," or "sustainable economy," these types of strategies attempt to find effective solutions to our country's ever-increasing dependency on fossil fuels while simultaneously boosting local economies through "high road" job creation. Increasingly, policy makers, practitioners, and investors alike are finding that green economic development dually promotes environmental protection and increased operation and/or production performance.

In localities such as Richmond, California, lack of employment opportunities, diminishing affordable housing stock, and high crime, experienced by segments of Richmond's populations, present serious impacts for the entire city. Green economic development offers a unique way for cities to concurrently revitalize its economy, while cleaning up the environment.

As green economic development is currently defined and practiced, however, benefits to low-income and people of color communities are not explicitly safeguarded. For that reason, as green economic development gains momentum, it is important to assess the criteria for success and to identify who benefits from green economic development policies and practices, *before* its current mode of operation becomes the norm. In other words, without candidly addressing equity in the growing green economic development movement, much of its potential to create opportunities and choices to those who have little or no access to them will be lost.

Therefore, in addition to supporting the three goals of creating : (1)a healthy environment, (2) a vital economy, and (3) social equity, an equitable green economic development strategy would incorporate equity such that individuals and families in all communities can participate in and benefit from economic growth and activity, especially by creating opportunities for access to quality jobs.

In practice, various municipalities such as Berkeley, San Francisco, Minneapolis, and Buffalo have approached green economic development with varying levels of equity. These case studies present valuable lessons, but also suggest ways in which cities can better develop policies to practice green economic development within an equity framework. Such policies include: developing a workforce development and training program to coincide with green industry businesses' needs, developing an equity-base criteria by which to prioritize business attraction decisions, strengthening local hiring and living-wage policies, and preserving industrial lands.

As Richmond enters a new wave of development, green economic development, practiced within an equity-framework, presents a tremendously unique and promising future for Richmond and its residents.

Introduction

During the early to mid-1940s, various cities across the country developed and expanded to support the war efforts during the Second World War. Now, over sixty years after the Second World War, these war-based economy cities continue their struggle to build up a stable post-war economy. In the Bay Area, Richmond, California, serves as a prime example. The early 1940s marked Richmond's heyday. Men, who had left to fight in the Second World War, were replaced by Rosie the Riveters and Wendy the Welders, who quickly made Richmond one of the most productive ship building centers of the nation. Over a short three-year period between 1940and 1943, Richmond's population swelled from 23,000 to 93,000, as people from the South and Southwest flocked to the shipyards for work. When the war ended in 1945, however,

Richmond's economic dependency on war-time production took a significant toll on the city. By the spring of 1946, the shipyards were laying off thousands of workers a month. By the early 1950s, more than 30,000 had left the city.[1] With post-war suburban development, and its corresponding impacts to center cities – population loss, declining tax base, and increasing concentrated poverty - Richmond now faces significant challenges to its economic well-being.

Since the war, Richmond has experienced noteworthy revitalization efforts. Especially in the northern Hilltop and waterfront areas of the city, new housing developments have improved the city's housing stock. More recently in 2004, the Richmond Redevelopment Agency unveiled its MacDonald Avenue Economic Revitalization Plan, a bold effort to jumpstart Richmond's declining downtown area. The plan conceptually details ways in which Richmond could revitalize its downtown. Plans to improve street conditions along MacDonald Avenue, including a new two-block mixed-use development and a new regional shopping center development, have all contributed to the implementation of the vision expressed in the MacDonald Avenue Economic Revitalization Plan.

However, these revitalization efforts have only benefited distinct areas and residents of the city. For families with stable employment and incomes above 115% of the area median, the newly developed or redeveloped areas of the city are financially accessible. However, for the 53% of Richmond families[2] who make under 85% of the area median, the majority of whom are people of color and immigrants, Richmond is a markedly different reality – one of poor education, high crime, limited employment opportunities, and a diminishing affordable housing stock.

The lack of employment opportunities, diminishing affordable housing stock, and high crime experienced by segments of Richmond's populations have had, and continue to have, serious impacts for the *entire* city. Chronic issues of violence and crime have plagued Richmond, and in the last 20 years, have claimed the lives of over 680 residents. In the summer of 2005, despite various efforts to curb crime, Richmond nearly called a state of emergency as a desperate response to a string of homicides. While the City Council declined to call the state of emergency, emergency funding was allocated for increased police surveillance. Soon afterwards, the Richmond City Council identified crime and safety as the number one priority for the city.

Equally troubling is the rate of unemployment in the City. According to the 2000 Census, unemployment in Richmond, at 7.3%, was higher than the unemployment rates at the county, state ,and national levels -- 4.6%, 6.6%, and 5.5%, respectively. Within certain neighborhoods of the city, unemployment rates are upwards of 14% in the Iron Triangle and neighboring census tracts. For those Richmond residents who hold jobs within the city, however, the quality of jobs is poor. In a recent analysis of key economic and workforce indicators, researchers found that non-Richmond residents hold a disproportionate share of the higher paying, skilled jobs while Richmond residents hold more of the less skilled, lower paying jobs.[3]

The persistence of crime and poor employment options in Richmond suggests that past and current efforts are insufficient, and innovative approaches are needed to understand and address the interrelated nature of these challenges facing Richmond, and especially its low-income neighborhoods. Creating a healthier Richmond for all residents will require new partnerships, innovation, and a more comprehensive approach that involves proactive interventions.

[1] BMS Design Group. Macdonald Avenue Economic Revitalization Plan
[2] U.S. Census Bureau. Census 2000 Summary File 3. QT-P32.
[3] East Bay Alliance for a Sustainable Economy. Richmond Economic Development Indicators Report.

In November 2003, a collaborative of non-profit groups – Urban Habitat, Contra Costa Faith Works!, and the Richmond Improvement Association, along with other partnering groups – began addressing issues of economic development in Richmond as one component of a larger equitable development initiative. This four-year initiative is premised on the notion that equitable development is key in achieving affordable housing, safe, reliable public transit, living-wage jobs, quality education, a clean environment, and quality health care for all city residents. In other words, combating Richmond's social hardships requires a comprehensive approach, framed around an equity agenda.

Two years after the collaborative's formation, the City of Richmond was presented with a unique opportunity to take advantage of the Green Waves Initiative, an investment program offered by the State Treasurer's Office for industries in the emerging green technology industries. The City subsequently approached Urban Habitat to conduct some research regarding green economic development and its potential to bring quality jobs to Richmond residents. Recognizing that the availability and accessibility of quality jobs is one critical aspect of equitable development, Urban Habitat agreed to participate in and review the green economic development movement through an equity lens.

Within the context of equitable development, green economic development has a clear connection to the creation of quality jobs. Through an equity lens, green economic development creates living-wage jobs, in non-polluting industries that provide a clear career ladder for low-income residents. It has the potential to create living-wage job opportunities directly with training programs so residents who graduate from programs have a tangible goal awaiting them. Most importantly, the benefits of connecting good, dignified jobs with workforce development would be made available to those who historically have had few or none. At the city level, these types of jobs would be incorporated into an economic development plan so that economic development is seen not merely as strategies to increase a city's tax base, but strategies that simultaneously invest in the city as much as it does in all its residents.

Already, the vision expressed above is being realized to some degree though the practice of green economic development. Green economic development, or "sustainable development," or "sustainable economy" is the merger of two traditionally different fields – economic development and environmental protection. It attempts to find effective solutions to our country's ever-increasing dependency on fossil fuels while simultaneously boosting local economies through "high road" job creation. Increasingly, policy makers, practitioners, and investors alike are finding that green economic development dually promotes environmental protection and increased operation and/or production performance. In other words, it pays to operate in a more environmentally sensitive manner. It is no surprise then, that investment into green industries has been on the rise, on state, national, and global levels.

However, without candidly addressing equity in the growing green economic development movement, much of its potential to create opportunities and choices for those who have poor or no access to them will be lost. Furthermore, for places like Richmond, where persistent crime and a lack of quality jobs are a reality, not taking advantage of the emerging green industries may translate to a missed opportunity to address deeper social ills that affect the city as a whole. Thus, this paper seeks to evaluate and redefine the growing green economic development movement to include principles of equity. To do so, we will first explore the current understanding and practice of green economic development and the degree to which issues of equity are addressed. Then, we will present policy and procedural recommendations for Richmond to advance an equity-framed green economic development strategy and position itself to become a leader in green economic development in the local, regional, state, and national arenas.

Green Economic Development – How Is It Currently Defined?

While there is no agreed upon definition of green economic development, the concept usually involves the three tenets of sustainability –**environment**, **economy**, and **equity**. The three tenets are viewed within a time continuum, whereby meeting the needs of the present does not compromise the ability of future generations to meet their own needs.[4] Green economic development then, integrates economic development – tax base expansion, wealth creation, and job creation – with the values of sustainability. The City of Toronto, Canada, states that, "green economic activity promotes healthy environments, vital economies, and social equity,"[5] where:

- A **healthy environment** promotes activities such as lowering the emissions of greenhouse gases, reducing a business's input of resources and output of wastes;
- A **vital economy** increases a city's competitive advantage globally; and
- **Social equity** preserves and creates gainful jobs, provides a healthy working environment, and plans for a community's quality of life

Implicit in these goals, also, is that financial profitability and social and ecological responsibility are mutually-reinforcing goals.[6] In fact, researchers and practitioners are learning that green strategies are not only gentler on our natural word, but often equate to higher performance, in other words, more cost efficiency in production or operation.

Various groups at the local, state, and national levels have and continue to pursue green economic development along various focus areas. These include: green building, the use of energy efficient technologies and/or recycled materials in construction; green procurement, purchasing supplies and equipment made from recycled or renewable resources; and waste reduction ,reducing output and/or devising means to recycle output streams. The health care industry is also gaining momentum in developing greener practices. The Green Guide for Health Care, for example, is a toolkit that outlines ways for "integrating enhanced environmental and health principles and practices into the planning, design, construction, operations and maintenance of [medical] facilities."[7]

More recently, researchers and policy-makers have looked toward the clean technology sector as a means of developing a greener, "high performance" economy. In a 2004 report by Clean Edge, in partnership with San Francisco's Department of the Environment, clean technology is described as "an emerging sector that comprises a diverse range of products, services, and processes that harnesses renewable materials and energy sources, dramatically reduces the use of natural resources, and cuts or eliminates pollution and toxic wastes."[8] Clean technology includes, but is not limited to, technologies such as solar photovoltaics (PV), wind power, hybrid electric vehicles, fuel cells, bio-based materials, and advanced water filtration. The report outlines a 10-step plan that would serve a dual purpose of attracting new jobs and businesses into San Francisco while concurrently reducing resource dependency.

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[4] World Commission on Environment and Development (WCED). *Our common future.*
[5] City of Toronto, Canada. The Green Economy Plan.
[6] Lippe, Pamela and Nixon, James. "Building the Sustainable Economy I" quoted in: http://www.ci.austin.tx.us/sustainable/workplan.pdf
[7] Green Guide for Health Care. http://www.gghc.org/about.cfm
[8] Pernick, Ron, Joel Makower, and Arthur de Cordova. "Harnessing San Francisco's Clean-tech Future, A Plan for Attracting Businesses and Creating Jobs."

The Economic and Policy Outlook

As green industries develop and grow, it is clear that aside from environmental justifications, promoting a green economy is becoming an increasingly sound economic strategy. In fact, investments in the clean technology industries have increased dramatically in recent years, reflecting an ever-increasing importance and growth of these fields at the national and global scale.

At the state level, green economic development is garnering political and financial momentum in California. Last year, Phil Angelides, California's state Treasurer, announced his commitment to California's environmental future with his Green Waves Initiative, a robust pension-backed investment program, which would channel approximately $500 million dollars into the green technology sector. In a 2004 study co-authored by the Natural Resources Defense Council (NRDC) and Environmental Entrepreneurs (E2), researchers found that twenty-nine percent ($339 million) of the North American venture capital investment in new "cleantech" technologies was invested in California. Correlated with the increasing investment is also the addition of jobs to the California economy. In the same 2004 study, NRDC and E2 projected that cleantech start-ups *alone* could create 52,000 to 114,000 jobs in the next five years.

Recent research by the Renewable Energy Policy Project also forecasts that California is especially posed to take advantage of the growth of certain renewable energy industries because many firms supporting the renewable energy industries are located in California. Growth in these industries, especially, would provide high-paying, skilled jobs, jobs that communities could train their residents to receive. In the PV industry, for instance, California could gain approximately 6,800 jobs in manufacturing and 3,500 jobs in construction and installation of PV components.[9] Within the wind turbine industry, California could add nearly 13,000 new manufacturing jobs, totaling over $4.2 billion in investments.[10] Furthermore, firms that do not specifically work within these industries now are well suited to translate their production lines and expertise to include PV and wind turbine development. These firms will also benefit from the growth of renewable, clean tech industries in California.

Coupled with growing investments, policy directives are also opening up new markets to clean technology. California's Public Utilities Commission, for example, passed a $2.9 billion California Solar Initiative this January to create incentives for commercial and residential customers to install 3,000 megawatts of solar energy from 2007-2017. As state and local policies, such as the California Solar Initiative, arise to reflect the prioritization of clean technologies, the demand for clean technologies will further deepen and encourage more businesses to participate in the green economic development movement.

Evaluating the Current Green Economic Development Definition

Indeed, investments in and policies regarding green economic development speak to its increasing acceptance and legitimacy in the public and private sectors. For that reason, as green economic development gains momentum, it is important to assess the criteria for success and to identify who benefits from green economic development policies and practices, *before* its current mode of operation becomes the norm. Specifically, to what extent are low-income communities and communities of color benefiting from green economic development? And, are policies constructed such that marginalized populations are explicitly included?

[9] These figures are based on the PV Industry Roadmap, which balances likely trends with industry objectives. California is projected to have installed 9,600 MW of PV energy by 2015 from its current capacity of 340 MW.
[10] Job and investment figures assumes development of 50,000 MW of wind energy.

As it is currently defined, green economic development broadens the traditional concept of economic development, such that in addition to the three goals of : (1)generating revenue, (2) creating wealth, and (3) creating jobs, the means to achieve those three goals are "sustainable." In other words, in addition to creating a vital economy are the two goals of ensuring a healthy environment and pursuing social equity. Social equity, as defined by the City of Toronto, seeks to preserve and create gainful jobs, provide a healthy working environment, and plans for a community's quality of life. Explicitly silent in this definition is the human dimension, focused at the individual level. Thus, for better or worse, the practice of green economic development is left wide open for interpretation.

The 2004 Clean Edge report, for instance, outlines a 10-point plan for San Francisco to harness its clean technology future. In summary, the report recommends that San Francisco take the following steps:

1. Communicate and coordinate the vision
2. Remove regulatory barriers
3. Appoint a clean-tech manager for the City
4. Align the City's procurement goals
5. Create a magnet clean-tech institution
6. Create a high-profile project
7. Leverage San Francisco's financial strengths
8. Launch a clean-energy incentives fund
9. Attract the flagship conferences
10. Partner with other regional players

As outlined, the ten-point plan provides a number of procedural goals, which would be instrumental to a successful economic development strategy. The plan prioritizes the creation of a vision for a clean tech future, communicated and implemented by a clean-tech manager. It identifies the city as a significant player in creating a market demand for clean technology products, and it conveys the importance of marketing San Francisco as a "ready and willing" place for clean tech industries. The plan also speaks to the importance of providing financial support and creating partnerships. While these steps are clearly useful in launching a greener economy, the ten-point plan is visibly biased toward the business community. To be sure, establishing a warm business climate is critical for any economic development plan; however, such a limited approach falls short of achieving equitable outcomes. The ten-point plan does not make mention of how and if San Francisco will make the connection between the jobs generated by green industries and the people who will receive those jobs.

Without assurance that job creation, for residents of all levels of educational attainment, is a focal aspect of green economic development, segments of the population are likely to be left out.
In recent years, for example, attracting biotechnology firms has been a popular economic development strategy for cities. Small and large cities alike have developed formalized means and/or incentives of encouraging biotechnology firms to locate in their jurisdictions. And while biotechnology firms do bring new jobs to a city, most jobs are within research and development. In other words, the jobs produced require highly specialized skills and higher education degrees, putting these jobs out of the reach of many residents of low-income communities. The mismatch between job opportunities and skill levels of city residents presents a serious issue to low-income communities. Often times, this mismatch forces city residents to travel out of the city for job opportunities more appropriate to their skill level, or they remain in the city and work for low-paying jobs with little or no career ladder.

Unlike the biotechnology or software development industries, one distinctive characteristic of green industries, and especially clean technology industries, is that they are uniquely poised to offer a range of well-paying skilled jobs. Often, because of the complex structure of clean technology products, solar panels and wind turbines, for example, the degree to which manufacturing can be outsourced or off shored is lesser than in other hi-tech industries. In addition to manufacturing jobs, clean technology manufacturing is also supported by installation, maintenance, and operation jobs. Thus, as an industry, clean technology presents a unique way to develop high-skilled, high-wage jobs. These types of jobs, however, will not necessarily follow with all green industry businesses. Cities must still proactively and explicitly prioritize and encourage the development of jobs across all skill sets, in order for green economic development to achieve equitable outcomes for residents.

In addition to equitable outcomes, the concept of equity concerns the process by which outcomes are achieved and decisions are made. As it is currently defined, green economic development is outcome-oriented. This implies that provided an economic development activity promotes healthy environments, vital economies, and social equity, then an economic development strategy is "green" and "sustainable." Borrowing from the environmental justice field, justice and equity are achieved, in part, when the full and fair participation by all potentially affected communities in the decision-making process is practiced. In terms of the green economic development, then, community participation can be incorporated in the crafting of workforce development programs. Indeed, workforce development programs which actively engage potential trainees, businesses, and the training providers are better suited to develop programs that meet the needs of all stakeholders. As the practice of green economic development continues to mature, it will be important to incorporate a participatory workforce development process. Without such a participatory process, the success of a workforce development program, and its associated green economic development strategy, will be compromised.

In summary, the definition of green economic development should make a commitment to social equity and make explicit who will benefit from such development. To achieve the goals of equitable green economic development, policies should create incentives to dually promote business attraction and job creation. New jobs should be accessible to city residents, *and* they should be evenly distributed among residents' varying levels and types of skill sets. In other words, green economic development should ensure that "individuals and families in all communities can participate in and benefit from economic growth and activity"[11]and have access to quality jobs."

An equitable green economy, then, is equitable by virtue of the types of policies and strategies it espouses. Striving for a vital economy, healthy environment, and social equity are not isolated goals and outcomes; rather, the three should be viewed collectively and equally. In other words, "equitable green economic activities promote healthy environments, vital economies, and social equity," through a firm commitment to creating opportunities and choices for those who have poor or no access to them

Green Economic Development – How Is It Currently Practiced?

Developing a green economy means something different for each locality. Geographical uniqueness, political structures, and development policies all play a part in shaping a city's green economic development strategy. The following section will present four case studies that illustrate some of the practiced strategies employed in Berkeley, California, San Francisco, California, Minneapolis, Minnesota, and Buffalo, New York.

[11] Policy Link. Equitable Development.

Berkeley, California

Green economic development is not a new concept to the city of Berkeley, where environmental businesses have been locating over the past twenty years, in part due to the intellectual resources from the University of California, Berkeley, and the "environmental motivations of its citizens."[12] Berkeley's leadership in the environmental arena is evidenced in their local government structure. Berkeley has an Office of Energy and Sustainability, and its mission is to "create a healthy physical environment, a more livable community, and a prosperous local economy, now and for the future."[13]

To work toward a more sustainable Berkeley, the Office of Energy and Sustainable Development provides a myriad of resources for residents and businesses alike, while concurrently promoting sustainability at the local government level. At the policy level, Berkeley has passed a number of resolutions and ordinances, which increase the city's sustainability. These include resolutions to reduce certain pollutants, promote environmental and/or local purchasing, reach a zero waste goal, and adopt the precautionary principle, to name a few. Energy audits, a recycling program, and an attic insulation program, as well as tips on green building and energy efficiency, are provided for city residents at little to no cost.

On the business side, the city of Berkeley provides a mix of services and incentives to promote waste reduction, energy efficiency. The Sustainable Business Alliance, a network of green businesses in the East Bay, provides networking, information sharing, and training opportunities for members. Additionally, the attraction, retention, and growth of green businesses are supported through Berkeley's economic development strategies. In 1993, the city of Berkeley developed an economic development plan aimed specifically to building an "environmental economy." The plan identifies a number of focus sectors, including: bioremediation, pollution prevention, analytic and pollution control equipment, consulting services, manufacturing monitoring, modeling and control, energy storage, transportation-related products and services, and environmental restoration. Strategies to attract new and grow existing businesses revolved around five main methods: position Berkeley to welcome environmental businesses, promote collaboration and alliance-building, develop business and markets, provide information and training services, and conduct outreach.

San Francisco, California

In 2001, San Francisco initiated a campaign to become the "country's largest user and producer of renewable energy"[14] by announcing plans to install 5,000 solar panels atop the Moscone Convention Center,[15] a $74 million dollar endeavor which would produce 825,000 kilowatts hours of electricity per year.

Last year, following a report by Clean Edge outlining San Francisco's competitive position as a world leader in clean technology, San Francisco rolled out its Clean Technology Initiative, which is modeled after the city's increasingly popular Biotechnology Initiative. In mid- 2005, Mayor Gavin Newsom appointed a clean-tech manager, who will "coordinate citywide clean-tech initiatives; market and execute the City's clean-tech business attraction strategy; ensure workforce development opportunities in the clean-tech industry; and act as a liaison to the Mayor's Clean Technology Advisory Council."[16] Later that year in November, Mayor

[12] Building an Environmental Economy: A Strategy for "Environmental Business" Economic Development for the City of Berkeley

[13] Berkeley Office of Energy and Sustainable Development.

[14] Lelchuck, Ilene. "S.F. Complex to Run on Sunshine Solar Panels Going Up at Moscone Center" from *San Francisco Chronicle*.

[15] The Moscone Center Solar project was funded through Proposition B, an initiative passed in 2001 which allows San Francisco to issue $100 million in revenue bonds for solar and other energy projects.

[16] Pernick, Ron, and Makower. "Harnessing San Francisco's Clean-Tech Future: A Progress Report." Pg. 10

Newsom convened a 16-member Clean Technology Advisory Council to act as ambassadors and promote San Francisco's clean technology policies. These events formally installed the Clean Technology Initiative within the San Francisco Mayor's office of Economic and Workforce Development.

While San Francisco's Clean Technology Initiative is still in its infancy stages, clean-tech manager, Jennifer Etine-Matz, believes the Initiative will grow in one of two directions – into a pension investment strategy or concrete programs, which facilitate the collaboration of business attraction and expansion with workforce development. For San Francisco, a major selling point to potential businesses is the City's commitment to creating a market for high performance products. Whereas San Francisco is not in a position to offer tax breaks, it will pledge to purchase products from clean technology businesses, reducing the risk for relocating businesses and allowing these businesses to expand into a new market.

More recently, San Francisco's Mayor's Office of Economic and Workforce Development (MOEWD) has initiated meetings with the national Apollo Alliance and local labor groups to build momentum and broaden interest for green economic development within the City. Representatives from the San Francisco Labor Council, Local No. 2 (hotel and restaurant workers) and Local No. 3 (office and professional employees) ,are speaking with (MOEWD) to identify a green economic campaign and to devise strategies to launch the campaign.

Minneapolis, Minnesota

In Minneapolis, the Green Institute, a non-profit organization, is leading the city to becoming more self-sufficient in energy production. Their goal to develop community-based clean energy addresses both the supply and demand sides of the energy equation. Specifically, the Community Energy Program generates solar and biomass heat and power (supply) while concurrently promoting conservation and energy-efficiency (demand).

Under its Phillips Biomass Community Energy Project, the Green Institute is employing biomass technology to help achieve a more sustainable production of energy for Minneapolis residents. The Phillips Biomass Project will use urban tree trimmings and agricultural residues to generate 20 megawatts of energy and heat. (This is equivalent to approximately one percent of energy demand in Minneapolis. Alternatively, one megawatt would supply enough energy for 1,000 homes.) The electricity will be sold to the electric grid, and the heat will be used for a Phillips-area community heating system.

Key to the Biomass project is a workforce development element. It is estimated that the Phillips Biomass Project will create an estimated 20 long-term, full-time jobs, half of which are estimated to be filled by trained personnel, who will likely be trained through an existing apprenticeship program with a partnering community college. Additionally, nearly 200 construction jobs and other indirect jobs for wood waste generators, farmers, and those in the transport sector are forecasted. As evidence to its commitment to local economic development, the Green Institute also pledges to hire locally and pay its employees a living wage (lowest wage will be over $15/hour).

Critical to the Green Institute's success has been its continual partnership with city and county governments. Both municipalities realized the ways in which the Green Institute's work supports their goals of reducing waste and diverting stormwater into productive uses. As such, Hennepin County provided financial support to the organization while the City of Minneapolis granted a variance to an existing building code.

Buffalo, New York

Buffalo's Green Gold Initiative came out of the City's common council (equivalent of city council) in the late 1990s. At the time, Buffalo's common council was involved with various environmental projects. One particular council member was interested in the idea of revitalizing Buffalo's declining steel industry through an environmental solutions industry. The resulting Green Gold Initiative was born, and the Green Gold Development Corporation, a non-profit entity, was established. The Green Gold Initiative sought to focus Buffalo's business attraction methods, and create a niche for Buffalo in the world economy, as the premier center for environmental industries in the United States, with the explicit goal of creating "interesting, fulfilling" and higher paying jobs for Buffalo residents.

In addition to setting up the Green Gold Development Corporation, Buffalo's common council moved to generate more support and enthusiasm for the Initiative. A board of directors, consisting of county and city representatives, academics, and businesses was established; the common council passed a resolution to make a formal commitment for a greener, job-generating city. Local businesses that were already engaged in green manufacturing, or interested in becoming more green, began meeting on a monthly bases at Buffalo city offices to network and collaborate. In the fall of 2001, Buffalo hosted a conference, *Learning Sustainability.* High profile speakers such as Jane Goodall, David Suzuki, and Paul Hawkins made presentations; over 50 businesses were represented in this business expo.

While the vision and momentum for the Green Gold Initiative was strong, unforeseen circumstances eventually led to the Initiative's decline. Specifically, budgetary constraints forced the common council to downsize. The original thinkers behind the Initiative left the council and political will to support the Initiative soon waned. Currently, the City of Buffalo does not have staff explicitly working to further the goals and vision of the Green Gold Initiative; however, the Green Gold Development Corporation is still in existence and is working on a wind energy initiative.

Evaluating the Practice of Green Economic Development

As shown in the four case studies above, the practice of green economic development varies just as much as the geographies in which they are practiced. And while green economic development has the three goals of a healthy environment, a vital economy, and social justice,[17] efforts to promote sustainability and green economic development seem to prioritize the goal of a healthy environment *over* social equity. Aside from the Green Institute, in Minneapolis, Minnesota, other jurisdictions have not sought to promote and practice job creation as a central component of their economic development strategy. Buffalo, New York primarily focused on revitalizing a declining industrial area by attracting new uses, particularly those in the environmental industries. While the city was able to communicate a vision for Buffalo's environmental future, implementing that vision proved to be difficult, especially in light of the common council's budgetary constraints. The Green Gold Development Corporation was able to create good networking opportunities for existing business; however, reaching its goal of creating "interesting, fulfilling" and higher paying jobs for Buffalo residents, required more resources than Buffalo was able to provide.

For San Francisco, developing a workforce development and training component in its clean technology initiative remains uncertain. Their approach to green economic development focuses first on creating a favorable business climate. However, the city's relationship with local community colleges, and its initial

[17] City of Toronto, Canada

partnerships with the labor community speak to San Francisco's intention to address workforce development challenges.

As for Berkeley, the bulk of the Department of Energy and Sustainable Development's work centers around lessening residents' and business' impact on the environment through incentive and service programs. Attracting and developing businesses that provide blue-collar jobs to city residents are just a small component of the Department's work. Within the policy arena, however, Berkeley has passed ordinances and adopted resolutions that could serve as models for other municipalities that want to formally take a stance on economic development issues.

Arguably, the lack of a strong job creation strategy aimed to benefit low-income and people of color populations stems from the lack of policy to guide such efforts. This suggests a gap in economic development policy making. It also speaks to the real difficulty of linking job creation within green industries with workforce development. Creating this link requires a committed and concerted effort at collaboration between local government, industry, training providers, and community residents. At the same time, however, the Green Institute's Biomass Community Energy Project presents an exciting model of which job creation is a central component to a green economic development strategy. Albeit small, the Biomass Project combines all elements of green economic development within an equity framework. The project itself will lessen Minneapolis' dependency on fossil fuels by creating a reliable energy source, powered by renewable sources. The over 200 direct and indirect jobs created by the Project will generate revenue for the city. The living wage jobs created will be made accessible to city residents through a workforce development program, created jointly with a local community college.

How are Businesses Going Green?

Just as green economic development strategies differ from place to place, businesses that fit into a green economy paradigm differ just as greatly in the type of work they do and how they strive to be "green." In some cases, businesses find that "greener" solutions achieve the most economical solution. By reducing inputs and productions wastes and designing for lower operating costs and maintenance requirements, for instance, businesses are creating higher performing products in cost effective ways. For example, MBA Polymers Inc., a Richmond-headquartered plastics recycling company, recently won the World Economic Forum's 2006 Technology Pioneers Award. Through their award-winning recycling process, MBA Polymer can produce plastics with 95% less energy than required to make the same product from petrochemicals.[18]

Beyond the economic bottom line, some businesses are also defining "green" to include their facilities' construction and operations. In constructing new facilities and/or renovating existing buildings, many businesses aim to achieve Leadership in Energy and Environmental Design (LEED) standards. A voluntary program, LEED "recognizes achievements and promotes expertise in green building through a comprehensive system, offering project certification, professional accreditation,"[19] among other services and resources. Participating projects are certified or receive silver, gold, or platinum rankings, based on their fulfillment of various criteria specific to the project type, including, but not limited to: site selection and design, water efficiency, energy and atmosphere impacts, materials and resources selection, indoor environmental quality, innovation and design process.

[18] "The World Economic Forum announces new class of technology pioneers for 2006: MBA Polymers, Inc. selected." American Recycler.
[19] LEED. U.S. Green Building Council.

In other cases, businesses broaden the concept of "green" to include policies, which affect their locality and employees' well-being. This may include objectives to hire locally, pay living wages, and provide health insurance. In other words, some businesses are defining "green" to include equity elements that seek to improve and maintain their employees' standard of living.

As green economic development builds momentum, businesses that employ equitable policies should be recognized and rewarded for their efforts. Local government scan encourage businesses to employ more equitable practices by offering incentives or creating policy that mandate local hiring, paying a living wage, and providing health insurance.

Lessons Learned from Current Practices

Green industries are increasingly staking out a part in the national economy. City agencies and other local-based groups have initiated various efforts to achieve a green economy with varying levels of equity built into their initiatives. However, regardless of where green economic development strategies have been implemented, it is clear that achieving a green economy is dependent on various factors – a good program, sufficient funding, political will, and a ready workforce, to name a few. Also, a significant factor is the timing in which an initiative is carried forth. The following illustrate some of the key lessons learned from the four case studies.

Local Government Support and Commitment are Critical

In Buffalo, NY and San Francisco, CA, clean technology initiatives were instigated from city government, and exemplify a city's capacity to carry forth innovative programs that encourage clean technology development. While both initiatives were government-initiated, the continuing operation and growing momentum of San Francisco's program demonstrates the importance of a sustained, government-led presence. This presence, in many ways, represents city leadership in marshalling what some may perceive as a risky venture. Additionally, formalizing the initiative through policy statements and creating full-time positions clearly communicates to onlookers (investors, clean technology firms, potential partners) that San Francisco is genuinely invested in a clean technology initiative.

Within a market context, local government can also play a significant part in creating a demand for new green industry-generated products. A commitment on the part of local government to purchase some quantity of goods, may serve as one good reason a firm will locate in that locality.

Also, if equity is to be a centerpiece in a green economic development strategy, local government must create the leadership and provide the resources to communicate, support, and create equitable policies, practices and programs. Without this type of commitment at the local government level, achieving any measure of equity in economic development will be unlikely.

Innovative Partnerships are Key

Without a doubt, achieving equitable outcomes in green economic development will require a high degree of collaboration among many stakeholders. In Minneapolis, MN, the Green Institute's work illustrates that non-governmental entities play important roles in advancing the growth of a clean technology sector at the city-level. Staff resources at the Green Institute provided the project vision and day-to-day operation and coordination, while local and county governments provided political support and regulatory flexibility to create a successful, innovative renewable energy project.

Especially as budgetary constraints become a reality for local governments, the ability to form partnerships with other public and private entities will prove to be critical. In this light, San Francisco's Mayor's Office of Economic and Workforce Development is truly making proactive strides by partnering with labor groups. Because labor organizations represent a large constituency, San Francisco is not only building a large support base for green economic development, it is also acquiring an intimate knowledge of the types of skills is offered by labor organization members. With that knowledge, San Francisco can more appropriately develop workforce development and training programs and attract green businesses that match the skill set of San Francisco residents.

Networking Encourages Information Sharing and Collaboration

In Buffalo, existing businesses exchanged ideas and collaborated through monthly networking meetings and the *Learning Sustainability* Conference. While in Buffalo's case, the fruits of these networking opportunities were not realized to a large extent, networking and information sharing opportunities are essential for emerging industries.

Targeting specific industries as an economic development strategy has become popular among municipalities. Its goal is to create a cluster of businesses, or a concentration of a particular industry and their supporting businesses in a geographical area. This geographical arrangement of businesses yields various benefits including, increased knowledge, information and resource sharing. As networking opportunities occur among businesses, the exchange of information will further develop a warm climate for the industry, further encouraging the cluster of businesses.

Recommendations: How Richmond Can Achieve a Green Economy

As Richmond approaches a wave of new development, it is faced with a truly unique opportunity to employ equitable green economic development to not only revitalize and renew the city, but also address some deep-rooted social ills that have distressed and impeded the city's economic growth. Emerging green industries are staking out a role in the state, national, and international economies, and will certainly continue to do so as policy and investments continue to support its development. The benefits associated with these green industries – a cleaner environment, less dependency on fossil fuels, quality jobs, and economic revitalization are all within reach for Richmond.

Already, a number of government-led actions and existing developments send the message that Richmond is on its way to becoming a greener city. In late October 2005, Mayor Irma Anderson joined 187 mayors, representing nearly 40 million Americans, to sign the U.S. Mayors Climate Protection Agreement. This agreement seeks to meet or surpass the Kyoto Protocol in local municipalities through various strategies. More recently, Council members Tom Butt and Gayle McLaughlin initiated City efforts to adopt a green building ordinance. The Richmond Planning Department has been charged with researching and spearheading this effort, which will likely include coordinating an inter-departmental group to develop city purchasing and construction policies, as well as incorporating new policies, building guidelines, and incentives into planning documents.

In February 2006, the City of Richmond, in collaboration with Urban Habitat, crafted a resolution to illustrate the city's commitment to green economic development. This resolution formally established Richmond's position that "economic opportunity, environmental integrity and societal equity are the

foundation upon which sustainable cities can build a better quality of life for its residents."[20] Furthermore, the resolution detailed the elements of a sustainable community:

- **Ecological Integrity**: including satisfying basic human needs such as clean air and water, protecting ecosystems and biodiversity; pollution prevention strategies.
- **Economic Security**: including local reinvestment; meaningful employment opportunities; local business ownership; job training and education.
- **Empowerment and Responsibility**: including respect and tolerance for diverse views and values; viable non-government sector; equal opportunity to participate in decision-making; access to government.
- **Social Well-Being**: including a reliable local food supply; quality health services, housing and education; creative expression through the arts; safety from crime and aggression; respect for public spaces and historic resources; a sense of place making a contribution to the community

Following the resolution's passing, a Green Economic Development Symposium was convened in Richmond on February 24, 2006. Attended by over 120 people from the business, investment, government, and community realms, the Symposium showcased Richmond's prime real estate and gave attendees an opportunity to network and talk to state and local government about investment prospects.

On other fronts, Richmond is home to a number of businesses and services, which promote green practices. As mentioned above, MBA Polymers, Inc. was a 2006 recipient of the World Economic Forum's Technology Pioneers Award for its innovative recycling process. CytoCulture International, Inc., an environmental biotechnology firm in Point Richmond, specializes in bioremediation services as well as biofuels manufacturing. The West Contra Costa Landfill is also employing a methane conversion process to reduce greenhouse gas emissions. These businesses have realized the benefits of locating in Richmond – abundant industrial land, a strong Bay Area market, access to transportation infrastructure, and a business friendly city government. A coordinated effort to market Richmond as a green business-friendly city would undoubtedly similarly encourage other businesses.

These events, policies, and already established green businesses, provide a strong platform from which Richmond can work toward its green economic development future. However, in light of Richmond's struggling economy and its serious crime issues, it is imperative that Richmond approaches a green economic development strategy with a comprehensive vision and a strong commitment to equity. To that end, the remainder of this paper will present a set of policy and procedural recommendations to help Richmond forward an equity-framed green economic development strategy and position itself to become a leader in green economic development in the local, regional, state, and national arenas.

Policy Recommendations

1. **Coordinate and invest in a workforce development program with Richmond and Contra Costa County service providers.** The unique opportunity in green industries is its innate ability to offer high-skill, high-wage jobs. Often, these jobs do not require a college degree; rather, they are accessible to those with a particular skill set, acquired through training. As such, it will be critical for the City to work with Contra Costa Community College to expand on existing job-training curricula or develop new ones to accommodate the needs of green industry firms while simultaneously meeting the needs of Richmond residents.

[20] City of Richmond. Resolution No. 11-06 A resolution supporting the California State Treasurer's Office Green Wave Initiative Economic Development Roundtable in the City of Richmond February 24th 2006

2. **Develop a set of criteria by which to prioritize business attraction decisions.** When targeting for and selecting green industry businesses, Richmond should evaluate the businesses according to their ability to provide quality jobs (jobs that pay a living wage and provide a clear career ladder) to Richmond's low-income residents. Furthermore, the city should actively seek out and provide incentives to attract businesses that are able to do so. The expertise of in-house economic development practitioners should be combined with that of staff within the Employment and Training Office to draft a comprehensive set of criteria.

3. **Strengthen local hiring and living-wage policies.** While Richmond currently has ordinances supporting local hiring and a living wage, such policies need to be strengthened to ensure that the benefits of such legislation is broadened to include as many Richmond residents as possible. Richmond may also encourage local hiring and living-wage policies by providing tax incentives to new green businesses, for example.

4. **Preserve industrial lands.** As housing demand further increases pressure for cities to convert industrial lands into housing developments, it is imperative that local governments implement policies to preserve industrial lands. This would ensure that sufficient areas are available for incoming industries. Zoning areas of the city to be industrial will also maintain more affordable prices to potential new businesses. As one of the last remaining Bay Area cities that still maintains a significant amount of industrial lands, Richmond is considerably more well-suited to provide space for potential new green industry business.

Procedural Recommendations

Once Richmond has core foundational policies in place, it must cultivate a warm and cooperative business climate for existing and potential new green industries. The following procedural recommendations outlines a set of steps Richmond should pursue to better position itself as a city ready to move toward a green economy.

1. **Communicate a plan for a green economic future.** Formally communicating the City's intentions for a green economy is key. This may include devising a plan, which lays out strategies for attracting green businesses, developing a cluster of green technology businesses, and integrating green technology businesses with a ready and able labor force.

2. **Create a green business-friendly environment.** Richmond would also encourage green businesses to locate in the city by creating a green business-friendly atmosphere. A streamlined permitting process, fee waivers, tax incentives, or a city commitment to purchase a company's green product would clearly communicate Richmond's commitment.

3. **Appoint a Green Economy Advisory Council.** A green economy advisory council would put Richmond on the map to firms in the clean technology and other green economic development fields. With its network of contacts and expertise in the green economic development field, a green economy advisory council would be able to work with current economic commissioners, to combine each group's experience and expertise to customize strategies for the City.

4. **Create a position for a green economy manager.** Coordinating and implementing a green economic development plan for the city will require time and expertise. A dedicated manager would help ensure that efforts to attract businesses are aligned with efforts to train and prepare Richmond residents for new jobs in the City's green economy.

5. **Collaborate and partner with key stakeholders.** Developing and implementing a successful equitable green economic development strategy will call for the collaboration of a wide array of stakeholders – community leaders, Richmond residents, labor organizations, training providers, local government, and businesses. Each entity is critical in providing resources, support, and ideas, which together would build up a robust economic development program.

6. **Coordinate and partner with other Bay Area cities.** Already, other Bay Area cities, namely Berkeley, San Francisco, and Oakland, are developing strategies to create a greener economy. While each city may employ differing strategies and offer unique incentives to potential businesses, recognizing the limitations of each locality and the potential advantages of collaboration would allow all Bay Area cities to benefit from industries in the burgeoning green economy.

Conclusion and Next Steps

This paper sought to redefine the principles of green economic development to include equity. It explored the current understanding and practice of green economic development and presented four case studies that illustrate how green economic development is practiced in municipalities across the country. The recommendations presented are intended to provide a starting point for Richmond to further explore the policies and processes that will create an equity-infused green economic development program.

Unlike traditional forms of economic development, green economic development, if practiced equitably, is uniquely poised to simultaneously present solutions to environmental degradation, lack of quality jobs, and economic decline – conditions that low-income communities, like Richmond, often face. Equitable green economic development offers the potential for living-wage jobs in non-polluting industries that provide a clear career ladder for low-income residents. Through a coordinated training program, city residents will be prepared for these jobs. These outcomes will not only benefit low-income residents; however, because quality employment for low-income city residents has clear implications for a city's overall economic and social well-being.

Richmond will still need to do a fair amount of research and exploration before it can determine the best green economic development strategy to employ. Some research areas may include:

- A survey of Richmond and Contra Costa county's workforce development programs and how they can support and/or be modified to train students for the skills required for jobs in green industries
- A survey of available industrial lands well suited for green industries
- A detailed survey of specific strategies that other Bay Area cities have found useful and effective
- An analysis of how current departments can redirect and/or enhance resources to promote green economic development

Green economic development is not a guaranteed solution for Richmond's economic development, lack of employment opportunities, diminishing affordable housing stock, and high crime rate, nor should green economic development be viewed as the only solution. However, at this point in Richmond's development, and in the green economic development movement's growth, the time is right for Richmond to earnestly consider how it can take advantage of the growing movement.

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