Environmental Justice and EPA's Brownfields Job Training Program

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Executive Summary

The Environmental Protection Agency's (EPA) Brownfields Job Training Program, which recruits and trains economically disadvantaged individuals to work in the environmental cleanup field, has complex environmental justice (EJ) implications. By increasing employment rates and enhancing the cleanup workforce, EPA's program has the potential to offset some of the economic and environmental burdens inflicting brownfields-impacted communities, which are often composed of minority and low-income populations. The program also has the potential, however, to lead participants into an employment field with environmental risks to which they would not otherwise be exposed. While EJ advocates are aware of this potential, there is little literature available on the topic, and the literature that does exist rarely cites participants' perspectives regarding the burdens associated with this program. The objectives of my research were to collect participants' perceptions of the program, determine how these perceptions correlated with EPA's program goals, and analyze the EJ implications of the program using participants' own articulations of their training experiences.

I focused my research on brownfields job training programs located in Providence, Rhode Island and Bridgeport, Connecticut. I conducted 25 interviews with current and past participants of these programs. I then analyzed my interviews through

three EJ lenses that provided a framework from which to evaluate economic, environmental, and community-based EJ issues.

My most significant finding from the interviews was that previous to participating in the program, the majority of interviewees had been working at jobs that exposed them to environmental health risks. Many of these workers had not been fully aware of the risks until they participated in the course, and had failed to take adequate safety precautions. Although I found that no graduates are currently working in their own communities – which draws into question the program's direct influence on the rate of cleanup in the target communities – I did find that most participants are now utilizing greater safety precautions in both their home and work environments. Additionally, many participants have been sharing the course's health and safety information with other members of their communities.

The interviews also revealed important differences between the program experiences of Providence and Bridgeport participants. Providence participants were generally more enthusiastic about the quality of the training, particularly the post-program support that was offered as graduates transitioned into the environmental cleanup field. In addition, a greater percentage of Providence participants said that the course has helped them to better understand the environmental issues impacting their own communities, and that they are able to apply the course information to their daily lives.

These findings challenge my initial hypothesis that program participation could increase the risks that trainees are exposed to in the field. In reality, the workplace risk for many of the interviewees who *previously* had manual labor jobs was *reduced* due to the course's safety and health instruction. I also found a correlation between participants'

satisfaction with the course and instruction that focuses on local issues, suggesting that when participants are able to ground information in a local context, the technical training becomes more meaningful. Finally, the interviews I conducted with participants provided insights about the program that I had not been able to garner from other sources. These perspectives proved to be a valuable tool in evaluating EPA's program goals.

As a result of these findings, I recommend that EPA and program facilitators relate the course's technical training to local issues whenever possible. This will not only give the participants a more comprehensive environmental education, but it can also stimulate care and concern for the environment of participants' communities. I also recommend that EPA implement an evaluation process in which program participants and graduates articulate their experiences. This information could prove to be an important source of feedback to EPA and program facilitators. In addition, placing value on participants' voices encourages participants to take ownership of their course-related experiences, which are potentially life-altering. In turn, this sense of ownership and accomplishment among participants could stimulate higher retention and post-program employment rates.

There is value to be gained in future research that tests whether the conclusions drawn from the Providence and Bridgeport participants' perceptions hold true for other programs. As demonstrated by my interview results, participants' experiences vary across programs; findings from two programs, therefore, do not necessarily apply to others. Determining the scope of these findings will help EPA and their grantees make national and local program improvements.

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– Chapter 1 –
Introduction

In recent decades, our nation's urban centers have become increasingly blighted with derelict, potentially contaminated industrial property. The neighborhoods harboring these sites often are primarily composed of low-income and minority residents, and the burdens associated with abandoned property disproportionately harm these populations relative to affluent white populations.[1] In the 1990s, the US Environmental Protection Agency (EPA) launched a multi-pronged initiative to address this escalating trend. One facet of EPA's effort is a Brownfields Job Training Program (referred to in the remainder of my thesis as The Program), that recruits and trains low-income and minority individuals to work in the environmental cleanup field. The courses are funded by EPA grants and facilitated by various types of grantees, including nongovernmental organizations, community colleges, and city and state agencies. My thesis research looks at the environmental justice implications of this Program.

I became interested in this topic in March 2005, after I interviewed some members of a small nonprofit organization in downtown Providence for a Brown University radio journalism story. At the time, Groundwork Providence (GWP) was

[1] Bullard, Robert and B. Chavis, ed. Confronting Environmental Racism: Voices from the Grassroots. The South End Press, 1993, P. 17

recruiting participants for a course in environmental cleanup that was slated to begin in April. GWP had already completed one of EPA's two-year job-training grants, and they had recently received news that the grant would be renewed. My interest in GWP's Program was spurred by the high percentage of low-income and minority participants. Indeed, GWP's recruitment had targeted neighborhoods in Providence and Pawtucket with some of the highest poverty rates in the state.[2]

The objective of The Program, which EPA initiated in 1998, is to ensure that the employment opportunities stimulated by the environmental remediation process are directed towards those communities most burdened by brownfields. EPA defines brownfields as, "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."[3] Generally, brownfields refers to industrial sites, but the definition in reference to The Program also includes residential environments that are potentially contaminated with substances such as lead paint or asbestos. In the grant application, potential Program facilitators such as GWP identify local communities with high poverty and unemployment rates, and then outline how these neighborhoods are impacted by brownfields. Grant recipients focus their participant recruitment efforts in the identified communities. In addition to accepting residents from these communities, Programs often accept applications from under-employed and unemployed persons residing in brownfields-impacted communities in the greater region. The Program's targeted recruitment was developed, in part, as a response to information gathered from public hearings on urban revitalization and brownfields, which were sponsored by The National

[2] http://www.uwri.org/factsdisplay.cfm?id=9, 1/11/06
[3] http://www.epa.gov/swerosps/bf/index.html, 10/20/05

Environmental Justice Advisory Committee and EPA in 1995.[4] In these hearings, residents of brownfields-impacted communities expressed their desire for brownfields redevelopment to benefit those people most burdened by brownfields. The job opportunities stimulated by the cleanup process is one of the potential benefits they identified.

At the time I first spoke with GWP, I was taking a course in Environmental Justice (EJ), and it was a natural step to consider The Program in an EJ context. The premise of the EJ movement is that minority and low-income populations are disproportionately exposed to environmental hazards at home and in the workplace. My initial question was, 'Does The Program help or hurt this pattern of disproportionate harm?' I hypothesized that The Program's impact could encompass reducing residential harms through cleanup projects in minority and low-income neighborhoods *and/or* increasing the harms that participants were exposed to in the workplace. I also assumed that if participants were exposed to hazards in the environmental cleanup field (which is an inherent risk of much of this work), then they were making a tradeoff between health and wages. I wondered whether or not workers had sufficient knowledge concerning potential risk to make an educated decision about their participation in The Program and their future employment.

My background research looked at local and national brownfields issues, EJ concerns related to hazardous work environments, and EPA's Brownfields Job Training Program, with a focus on the eight Programs in New England. I wanted to ground my initial questions in a more detailed context, as well as find sources that would test my

[4] http://www.epa.gov/compliance/resources/publications/ej/nejac/public_dialogue_brownfields_1296.pdf, 1/11/06

early hypotheses. What was most striking about the initial phase of my research was that the voices of participants were largely absent. While EPA publications include success stories in which particular Programs are commended, quotes from Program participants only represent the positive aspects of the job-training experience. When it comes to the debate on EJ issues, neither Program advocates nor critics were supporting their positions with the voices of participants. This absence ignited my curiosity about participants' perceptions of The Program, and led me to seek their own articulation of their experiences.

As a result of this background research, my research questions were:

1) How do participants perceive the benefits and/or burdens associated with The Program?
2) How do these perceived benefits/burdens correlate with EPA's Program goals?
3) What insights do participants' experiences offer regarding the complex EJ issues embedded in the structure of The Program?
4) Are participants trading their health for wages? If so, are they making this tradeoff knowingly?

By conducting interviews with Program participants, I aspired to collect new perspectives that would help tease apart a complex topic. I also hoped that this information could assist EPA and Program facilitators in their goal of using The Program to address EJ issues inherent in brownfields-impacted communities.

After discussion with each of the eight Program facilitators in New England and interviews with Program participants, I analyzed what I learned in the interviews through

multiple lenses used to look at EJ issues. This synthesis helped me to draw conclusions that relate to different aspects of EJ and begin to answer my research questions.

In this thesis, I will first review details of The Program, as well as relevant brownfields information and EJ background. I will then expand on the research methods that I used, before discussing the results of the interviews and my conclusions and recommendations. An appendix follows the recommendations, and provides a full list of my interview questions.

– Chapter 2 –
Methodology

I used the following methods to collect Program participants' experiences, and to test my research questions regarding the positive and negative impacts associated with participating in The Program.

Program Research

I first familiarized myself with the eight Programs in New England. I met with seven of the eight Program facilitators, and spoke with the eighth by phone. These conversations covered successful strategies as well as dominant challenges.

I also spoke with the EPA coordinator of the New England Programs, Chris Lombard, and read through EPA publications about The Program, including the resource binders given to facilitators at The Program's annual conference. Additionally, I read articles published by the Environmental Justice and Community Caucus, which meets at the annual National Brownfields Conference, and often discusses The Program in its meeting.

Some of this background information was gathered for the EJ term paper I wrote last semester, which looked at the structure of The Program from an EJ perspective. This

paper was reviewed and commented on by Joseph Bruss, the Environmental Justice and Job Training Coordinator at EPA headquarters in Washington DC. His comments straightened out some technical Program facts and provided insight regarding EPA's intentions for The Program.

Literature Review

My literature review consisted of looking at brownfields information on national and local levels, as well as EJ issues as they pertain to brownfields. Through academic journals and governmental websites, I investigated theory on sustainable brownfields redevelopment, the "green" assumptions often made about environmental cleanup industries, and the efficacy of the compensating wage differential as a solution to hazardous work. These issues will be further explored in the next chapter.

Interviews

In September, I submitted a research proposal, including interview questions, to the Institutional Review Board (IRB). The IRB process ensures that research conducted by affiliates of the University is safe and ethical. After reviewing my proposal, the board determined that my research fell under the category of exempt review.

My intention was to speak with a cross section of participants from the eight Programs in New England; however, access to participants' contact information proved difficult. One of The Programs had disbanded since it ended in August, and the contact information for participants had been misplaced; the participants of four other Programs had signed contracts that included terms of privacy; and one Program did not respond to

my request for participants' contact information. In the end, I had contact information for two Programs: Groundwork Providence, and The WorkPlace Inc. in Bridgeport, CT. Over the course of a month, I called 91 Program participants, reached 27, and interviewed 25 (two people declined to be interviewed). My sample included graduates and current students. Before interviews began, I described the objectives of my research, and the conditions of the interviews. Participants consented to the interview knowing they were doing so on a voluntary basis and that their answers would remain anonymous. Interviews lasted between 15 and 40 minutes.

While I had planned for a sample population that spanned across many different Programs, focusing on just two gave me a more in-depth sense of how participants' experiences tied to specific Programs and geographic locations, and this proved to be helpful in my analysis. By phone, I interviewed 15 participants from the GWP Program (half of whom are currently enrolled and half of whom had graduated), and ten graduates from the WorkPlace Program. I also attended the information sessions GWP offered as part of its recruiting process, and observed some of GWP's job-training sessions this fall.

My original list of interview questions covered many aspects of The Program, from initial interest to post-Program support to community benefit. I pared this list down over time and found the following questions to generate the most insightful answers: Why did you decide to participate in The Program? How has the training influenced your employment? What other ways have you benefited from the training? Where have you worked since graduating? What did you learn that you think would be useful knowledge for others in your community?

Analysis

To structure my analysis of the interviews, I used three EJ lenses that divide brownfields' issues into economic, environmental, and process-based arenas. I will draw conclusions in each of these areas, and then provide an overall synthesis in order to address my research questions.

Research Limitations

There is a bias in my data that is important to acknowledge. The national post-Program employment rate in the environmental cleanup field is approximately 62%.[5] However, 85% of the people I interviewed are now employed in the environmental field, which means that I did not talk to a representative sample of Program participants. Although I was given long lists of phone numbers, including Program dropouts and unemployed graduates, many of the numbers had been disconnected. I speculate that those not successfully working in the field may lead relatively unstable lives, and thus have not maintained the same phone number. Furthermore, it is possible that the two Programs to which I had access have been more successful than other Programs in New England, potentially influencing their willingness to participate in my research.

The result of an unrepresentative sample is that the conclusions I will draw pertain *primarily* to Program graduates who found work in the environmental field as a result of The Program, and/or to current Program participants; they do not represent the whole population of participants, and do not necessarily represent experiences outside of the GWP and WorkPlace Programs.

[5] http://yosemite.epa.gov/opa/admpress.nsf, 1/10/06

– Chapter 3 –
Background Research

I. Brownfields

a. History

EPA describes brownfields as properties that are not *necessarily* hazardous, but because of their past industrial use, cannot be assumed to be clean. Unlike Superfund sites, where contamination is defined as being a possible threat to public health and/or the environment and is addressed using federally leveraged dollars[6], brownfields do not pose an immediate risk to the general public. Under some circumstances, however, brownfields can pose environmental and health dangers. If a contaminated site is developed without being properly remediated, contaminants can create health risks to the construction crew, as well as to the occupants of the new business, residence, or school. In addition, unremediated brownfields can be dangerous to people trespassing on the property,[7] and can pose risk to workers who are assessing or cleaning the sites. Common contaminants include: petroleum, lead, asbestos, and polychlorinated biphenyls (PCBs).[8]

[6] http://www.epa.gov/superfund/action/law/cercla.htm, 1/10/06
[7] http://ehp.niehs.nih.gov/members/2002/suppl-2/183-193litt/litt-full.html, 1/11/06
[8] http://www.osha.gov/SLTC/brownfields/recognition.html, 1/11/06

There are approximately 450,000 brownfields nationwide.[9] Hundreds of thousands of contaminated properties have been abandoned in recent decades, leaving dangerous eyesores in city centers. People with ample financial and social resources have escaped this urban blight by moving to the suburbs, leaving the neighborhoods of the deteriorating hearts of US cities primarily composed of minority and low-income populations. Real estate depreciation in these areas has further stratified neighborhoods by lines of class and race.

This trend has developed in the wake of the US economy shifting from largely manufacturing to service- and knowledge-based industry[10], which commentators attribute to manufacturing industries relocating to developing countries in order to acquire cheaper labor, as well as the expensive process of bringing aging facilities to code, and the explosion of a technological market. Many communities that were once industrial centers are now blemished with vacant, potentially dangerous property, symptomatic of the economic strife urban centers have endured as the industry has migrated.[11] Low income and minority populations are disproportionately impacted by brownfields, and the impact is considered to include economic, environmental, and social harms.[12]

b. Incentives for Remediation

There are many different kinds of burdens associated with brownfields. In addition to the potential health risks to trespassers, remediation workers, and future land

[9] http://www.epa.gov/brownfields/about.htm, 1/11/06
[10] Shutkin, William. The Land That Could Be: Environmentalism and Democracy in the Twenty-First Century. The MIT Press, Cambridge, ma, 2000, P. 63
[11] Solitare, Laura and Michael Greenberg. "Is the U.S. Environmental Protection Agency *Brownfields Assessment* Pilot Program environmentally just?" Environmental Health Perspectives Supplements Apr. 2002: vol.110, P. 2
[12] http://ehp.niehs.nih.gov/members/2002/suppl-2/183-193litt/litt-full.html, 1/11/06

users, brownfields can lower nearby property values and potentially contaminate neighboring land, as well as attract illegal activities such as dumping and drug dealing.[13] EPA has found multiple brownfields' sites to be linked to increases in crime rate, vandalism, and public health risks.[14] In addition, brownfields are often thought to be public eyesores, which detracts from the aesthetic value of a community. The potential hazards associated with these sites deter economic developers, and so the surrounding communities continue to experience economic decay. Collectively, these associated harms make a strong argument for addressing the brownfields that have burdened our nation's most vulnerable communities.

Remediation of brownfields can provide the opportunity for many economic, environmental, and social benefits. In 2000, the US Conference of Mayors estimated that brownfields cleanup and the resulting economic development could create over 550,000 new jobs and stimulate up to $2.4 billion in annual tax revenues.[15] The hope is that this economic growth will raise the quality of life in surrounding neighborhoods by increasing opportunities for employment. Environmentally speaking, removing toxins from communities that are disproportionately exposed to environmental hazards is another benefit. In addition, remediating brownfields sites helps to combat urban sprawl by providing an alternative to developing open land.[16] It is estimated that for every acre of

[13] Greenberg, Michael, Lee, Charles, Powers, Charles, "Public health and brownfields: Reviving the past to protect the future" American Journal of Public Health December, 1998, Vol. 88
[14] Brownfield 2004 Grant Fact Sheet, Racine, WI, EPA Report 500-F-04-179, available at: http://www.epa.gov/brownfields/04grants/racine.htm, 1/11/06
[15] McCarthy, Linda. "The brownfield dual land-use policy challenge: reducing barriers to private redevelopment while connecting reuse to broader community goals." Land Use Policy Oct. 2002: vol. 19, P. 2
[16] Shutkin, The Land That Could Be: Environmentalism and Democracy in the Twenty-First Century. Cambridge: The MIT Press, 2000P. 64

brownfields that is reused, 4.5 acres of greenspace are preserved.[17] This statistic takes into account the footprint of the developed site as well as the city infrastructure that would be needed to support new development such as water and gas lines, sewers, and public transit. There are also social benefits. Developing brownfields makes neighborhoods more aesthetically appealing, and remediation can make communities safer by reducing the number of sites that are perceived to attract dangerous and illegal activities. Collectively, these benefits can improve the social environment of a community.

The financial responsibility of cleaning up brownfields has historically fallen on developers. Until recently, most brownfields remained unsecured and unremediated until a business was interested in developing them.[18] This meant that neighborhoods and communities generally depended on outside entities to initiate remediation and, as a result, often lacked the authority to decide the nature of brownfields redevelopment, such as choice between industry, greenspace, business, and housing. Furthermore, the lack of social capital that characterizes many of the communities in which brownfields exist minimized a community's ability to allocate time and money towards the redevelopment of its brownfields. This was problematic, as many studies have found that community involvement is a crucial component of sustainable brownfields redevelopment.[19]

An additional problem with this structure was the potential steep liability associated with using previously contaminated land. Should a company buy property, develop their industry, and five years later contamination emerges as a result of past land

[17] www.dem.ri.gov/brownfields, 11/15/05
[18] Shutkin, P. 64
[19] Siegel, Lenny. "The Do's and Don'ts of Community Involvement in Brownfields Revitalization." Published on the website for the Center for Public Environmental Oversight. www.cpeo.org, 11/11/05.

use, the new owner is often responsible for cleanup.[20] The risk of unanticipated costs deterred developers from considering brownfields as potential construction sites.

These roadblocks to successful brownfields remediation have made the cleanup process slow and tedious, particularly in low-income and minority communities that have fewer political and financial resources with which to apply social pressure.[21] Recent federal policy has attempted to address these barriers.

c. Policy

The EPA's brownfields initiative began in the wake of the early 1990s movement to take a federal stand against environmental injustices. President Clinton's 1994 executive order 12898 required federal agencies to ensure that their programs were not saddling minority communities with disproportionate environmental problems.[22]

Stricter EJ policy was met with mixed reactions due the conflict of interest it poses.[23] The debate was reminiscent of the one initiated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or "Superfund") passed in 1980. The stringent liability regulations outlined by CERCLA deterred the redevelopment of any site that had a slight chance of contamination.[24] Developing derelict property, for example, can initiate economic revitalization. However, if this property is potentially contaminated, then it must go through extensive assessment and cleanup first, even if the chance of contamination is minimal. The conflicting interests

[20] http://www.epa.gov/superfund/action/law/cercla.htm, 1/11/06
[21] Foreman, Christopher H. The Promise and Peril of Environmental Justice. Washington, DC: Bookings Institute Press, 1998, P. 24
[22] http://www.epa.gov/compliance/resources/policies/ej/clinton_memo_12898.pdf, 1/11/06
[23] Shutkin, P. 119
[24] Solitare and Greenberg, P. 5

raise an important question: Does there have to be a choice between environmental protection and economic growth?

EPA's Brownfields Action Agenda addresses this environment verses economy debate by stimulating economic development through environmental cleanup activities. The agenda was launched in 1995 with four objectives concerning sustainable brownfields redevelopment:

1) Provide pilot grants to initiate brownfields assessment and cleanup
2) Clarify liability issues
3) Encourage partnerships and outreach
4) Support job development and training

President Bush's Small Business Liability Relief and Brownfields Revitalization Act amended the agenda in 2002, stressing the importance of federal partnerships in pursuing the parallel goals of environmental cleanup and economic development, and the original agenda became the Brownfields Federal Partnership Action Agenda. More than 20 federal agencies make commitments in this evolved agenda to more effectively aid communities to "prevent, assess, safely clean up, and sustainably reuse brownfields."[25] The following section will describe this Agenda in greater depth, with the purpose of providing foundational knowledge for The Program, which is one of the Agenda's four categories of pilot grants.

[25] www.epa.gov/brownfields/html-doc/fedparfs_copy.htm, 12/1/05

II. EPA's Brownfields Initiative

a. Background

In 1995, EPA Administrator Carol Browner announced the inception of EPA's Brownfields Action Agenda.[26] Over the next few years, the multi-pronged initiative developed four types of pilot grants:

1) Assessment Pilots / Grants, which provide funding for the assessment of brownfields sites and the planning and community involvement related to the future of the site
2) Revolving Loan Fund / Pilot Grants, which enable states, political subdivisions, and Indian Tribes to make loans that are used in brownfields cleanup activities
3) Brownfields Cleanup Grants, which provide direct funding for the remediation of specific brownfields sites
4) Brownfields Job Training Grants, which offer free environmental cleanup training to residents of brownfields-impacted communities

Through these grants, in addition to the partnerships and policy clarification that the Agenda emphasizes, EPA seeks to accomplish four main goals: protecting the environment, promoting partnership, strengthening the marketplace, and fostering sustainable reuse.

Since the Agenda's inception, EPA has directed $6.5 billion towards brownfields remediation and created approximately 25,000 new jobs.[27] The 2002 amendment

[26] http://www.epa.gov/brownfields/aa.htm, 1/11/06
[27] http://www.epa.gov/swerosps/bf/about.htm, 11/5/05

allocated up to $850 million between 2002 and 2007 to fund pilot grants.[28] The hope is that these grants will provide the financial support and labor pool necessary to garner developers' interest in brownfields properties. In addition, EPA makes efforts to ensure that brownfields-impacted communities will be involved in site redevelopment,[29] with the intention to help communities to decide the *nature* of the development, whereas historically, communities' redevelopment interests have not always aligned with those of businesses.

b. The Brownfields Job Training Program

EPA began developing The Program in 1994 as part of their efforts to spur economic growth through brownfields remediation. The $200,000 grants fund two-year pilot Programs, with the hope that alternative sources of public and private funding will allow Programs to continue after that time.

A key aspect of The Program is the partnerships between the grant recipient and other interest groups impacted by brownfields such as developers, investors, community support groups, employers, and educators such as community colleges. Partnerships with community groups and social service organizations often yield resources to be utilized by Program participants such as childcare, homeless shelters, immigrant and language services, and other support services. These partners can also help The Program facilitator to increase the recruitment pool, as many of these organizations often have an extensive reach to low income and minority populations. Partnerships with interest groups, such as potential employers and developers, are extremely important, since it is through these that

[28] www.epa.gov/brownfields/html-doc/fedparfs_copy.htm, 11/2/05
[29] EPA Proposal Guidelines for Brownfields Job Training Grants, P. 2 (Handout at EPA's National Brownfields Job Training Conference, 2005)

Program facilitators can help graduates find jobs in the environmental cleanup field. Facilitators often strike unofficial first-source hiring agreements with these partners, in which the facilitator agrees to send skilled and qualified workers their way in exchange for the company giving preference to Program graduates.[30]

While it is The Program facilitator's responsibility to oversee the grant and develop partnerships, the technical aspects of The Program are often parceled off to subcontractors. These companies train and certify participants in multiple areas of environmental cleanup such as lead and asbestos abatement, and the handling of hazardous materials (hazmat). Occasionally subcontractors are also hired by grant recipients to provide the social support aspects of The Program such as interview training, job-placement, and post-Program tracking, as well as recruitment and applicant admittance.

Since the inception of The Program, more than 2,600 participants have completed the training, with approximately 1,600 graduates now employed in the environmental cleanup field.[31] Since 1998, 93 grants have been funded, totaling $15.3 million, and EPA will announce 12 new grantees in the near future, which will bring the total funding to $17.3 million.[32] Grant recipients range from governmental agencies to Indian Tribes to small NGOs and community colleges.[33]

The EPA awards grants according to a ranking system that evaluates applicants' ability to effectively run a Program in a community impacted by brownfields. A maximum of 15 points (out of 100) can be awarded for community involvement and

[30] Vaughn, Kizetta. Director of Special Training Programs at the Center to Protect Workers' Rights and Member of the EJ and Community Caucus, Phone Conversation: 11/14/05
[31] http://yosemite.epa.gov/opa/admpress.nsf, 1/10/06
[32] http://www.epa.gov/swerosps/bf/archive/pilot_arch.htm, 1/11/06
[33] http://www.epa.gov/swerosps/bf/joblst.htm, 1/11/06

partnerships. Applicants are asked how they will involve the community in the grant proposal process, as well as how The Program will address EJ issues impacting the target population. They are also asked to identify their strategies for helping graduates find sustainable employment. These strategies often include collaboration with assessment- or cleanup-grant recipients, early communication with environmental cleanup employers, and forming partnerships with local organizations that can provide participants with life skills training and pre-employment training such as childcare, transportation, and General Education Development Diploma (GED) preparation. Community need is awarded up to 10 points and includes demographic information and analysis, such as how poverty and unemployment rates impact the community, and how the prevalence of brownfields impacts the community's environmental, economic, and social status.

Although the application asks for information regarding community participation, EPA stipulates that the grant is to be used solely for technical training related to environmental cleanup. Furthermore, there is no guarantee that participants will work in their own communities or that the training will have a direct impact on the brownfields problems faced by those participants' communities. Instead, The Program is geared towards the direct and indirect community impacts that result from increased employment rates and cleaner city environments. This objective fits with EPA's explicit Program goals, which are summarized below.

c. EPA's goals

EPA establishes four main goals for the Job Training Program:

1) Foster a sustainable workforce
2) Recruit trainees from socio-economically disadvantaged communities
3) Provide quality worker training
4) Provide residents of brownfields-impacted communities the opportunity to qualify for jobs developed as a result of brownfields efforts[34]

However, as noted above, EPA's grant application criteria indicate that they are interested in benefits of The Program that extend beyond the technical training. Indeed, EPA states that The Program represents the agency's "dual commitment to environmental justice and brownfields cleanup and redevelopment," the idea being that EJ is addressed through providing residents of communities that are disproportionately impacted by brownfields the opportunity to qualify for jobs that are created by the brownfields redevelopment process.[35] The next section places The Program's EJ-related intentions in a larger EJ context pertaining to brownfields and hazardous work environments.

III. EJ framework

a. Background

While brownfields were emerging in urban centers during the past decades of economic upheaval, the EJ movement was taking root. Because an economic shift left many low-income and minority workers stranded, it was a crucial time for their hardships

[34] http://www.epa.gov/swerosps/bf/job.htm#abt, 1/11/06
[35] http://www.epa.gov/brownfields/html-doc/ss_ej.htm, 11/4/05

to be voiced by an organized movement.[36] At the root of this movement is the notion that due to the structure of our society, minority and low-income populations are disproportionately burdened by environmental harm, and as a result, there is a potential for these populations to also be inflicted by disproportionate adverse health effects.[37] Not only is race the most significant predictor of the location of hazardous waste sites[38], but the pace of environmental cleanup is significantly slower in minority communities relative to predominantly white neighborhoods[39] due to minority communities' deficit of financial resources, which are needed to resist sitings and lobby for cleanup.[40] Furthermore, many studies have shown that minorities are much more likely to be exposed to environmental harms at both home and in the workplace, and should ill-health effects result from this exposure, minorities are less likely to have the financial resources to obtain medical treatment.[41]

Collectively, these adversities demonstrate that a new form of racism has replaced the old concept of explicit racism, which was defined as the *intentional* discrimination against minorities**.** [42] The new concept of racism, EJ scholars say, consists of discrimination that is unintentional, implicit, polite, and accepted as normal. In the 2003 book, 'White-Washing Race: The Myth of a Color-Blind Society,' authors Brown et al explain that this new form of racism is found in "culturally and economically produced

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[36] Pellow, David. Garbage Wars: The Struggle for Environmental Justice in Chicago. Cambridge: The MIT Press, 2002, P. 131
[37] Gavin, James R. III (Author of Preface). Environmental Justice: Research, Education, and Health Policy Needs. National Academy Press: Washington DC, P. 11
[38] Foreman, Christopher H. The Promise and Peril of Environmental Justice. Washington, DC: Bookings Institute Press, 1998, P. 20
[39] Foreman, P. 24
[40] Jarvis, T. Destry. "Brownfields, greenfields, and environmental justice." Parks and Recreation March, 2002: vol. 37, P. 1
[41] Bullard, P. 17
[42] Brown, Michael, et al. White-Washing Race: The Myth of a Color-Blind Society. University of California Press: Berkley, CA, 2003, P. 35

systems of advantage and exclusion that generate privilege for one racially defined group at the expense of another."[43] The danger of this racism that is so deeply engrained in the structure of our political and cultural society is that it is *less* obvious and therefore harder to safeguard against.

Many researchers argue that minorities are not the only demographic harmed by our societal structure of advantage and exclusion. Research regarding the impact of environmental harms and their health implications for populations of low socioeconomic status (SES) shows an inverse relationship between SES and environmental risk. Hazards in the work environment are one example of this.[44] Health and nutrition surveys conducted in the past two decades, for example, show a correlation between high blood-lead levels and low socio-economic status.[45]

b. EJ in the Workplace Environment

As the proceeding paragraphs suggest, low-income and minority populations are disproportionately exposed to environmental harms both at home and in the workplace. Monetary compensation for what is considered to be dangerous work has long been common practice. The compensating wage differential (CWD), or "hazard pay," is defined by the department of labor as "additional pay for performing hazardous duty or work involving physical hardship."[46] Often times, workers are exposed to levels of

[43] Brown, P. 43
[44] Evans, Gary W. and Elyse Kantrowitz. "Socioeconomic status and health: The potential role of environmental risk exposure." Annual Review of Public Health 2002: Vol. 23, P.303
[45] Evans, P. 305
[46] http://www.dol.gov/compliance/topics/wages-other-hazard-pay.htm, 1/11/06

hazards that are higher than those permissible for the general public. This double standard is also justified, in concept, by the CWD.[47]

The theory of the CWD is that the sum of monetary advantages and risk-associated disadvantages resulting from a dangerous job is equal to that of a safe job. More specifically, the increased wages compensate for the risk through financial reparations for potential injury or disease that may be sustained at the workplace. The threat of paying higher wages is an incentive for employers to improve the safety of the workplace (as long as the safety measures are less expensive than the wage differential).[48] Proponents of the CWD also argue that even the most disadvantaged worker has the right to choose risky employment.[49] Whether or not workers are armed with the knowledge to make an educated decision, however, is up for debate. The main argument against the CWD is that workers who fill the majority of dangerous jobs do not understand the risks associated with such work. Voluntary risk is classified as "genuine free informed consent" in which workers are able to assess and understand the risk before choosing employment.[50] Even when employers disclose the hazards present in the workplace (which they do not always do), it is often difficult for individuals to accurately judge their personal level of risk. To make an accurate risk assessment, the worker must know his/her individual predispositions to risk. However, low-income workers have little access to healthcare, creating a huge barrier to their understanding of personal risk. Furthermore, there is often a disjunction between expert and lay perceptions of risk,

[47] Shrader-Frechette, Kristin. "Risky business: Nuclear workers, ethics, and the market-efficiency argument." Ethics and the Environment 2002: Vol. 7, P.1
[48] Shrader-Frechette, Kristin. "Trading jobs for health: ionizing radiation, occupational ethics, and the welfare argument." Science and Engineering Ethics Apr. 2002: vol.8, P. 144
[49] Dorman, Peter. Markets and Mortality. Cambridge: University Press, 1996, P. 26
[50] Dorman, P. 26

which can result in workers making uninformed decisions about risk exposure.[51] As a consequence, employees are often working under dangerous conditions without a fully educated consent.

The right to choose argument is again pulled into question by opponents of the CWD when the occupational opportunities of the working class are taken into account. When there are few other job opportunities, opponents argue, the right to choose is no longer applicable. Without such choice, particularly when workers are nonunionized, there is little pressure for employers to raise safety standards or wages, and conditions remain stagnant.[52] Proponents say that a more stringently imposed CWD system, in which hazards were fully disclosed to workers, would solve this problem. Opponents say larger structural changes need to be made first. For the time being, however, EPA has become a player in an employment field that lacks an adequate CWD system, and is deeply rooted in complex social structures.

In theory, The Program could address EJ issues by reducing health hazards associated with brownfields, while simultaneously stimulating economic growth through increased employment opportunity, both of which can improve the quality of life in a community burdened with environmental problems. As I mentioned in the introduction, this hypothesis was based on the assumption that by participating in The Program and subsequently entering the environmental cleanup field, where wages are theoretically higher because of environmental risks, individuals were making a tradeoff between health and wages. As I began my background research, I looked for resources that would both support and refute my EJ concerns, as well as offer insight concerning The Program's

[51] Foreman, P. 29
[52] Shrader-Frechette, "Trading jobs for health: ionizing radiation, occupational ethics, and the welfare argument." P. 145

relationship to the CWD debate. There are many success stories about individuals securing well-paid jobs after completing The Program. However it proved difficult to find voices that shared my EJ and CWD concerns and offered ideas on how to address them. One valuable resource, however, was the Environmental Justice and Community Caucus that meets at the annual Brownfields Conference. At their 2004 meeting, they outlined the following Significant Barriers to Success:

1) Lack of ordinances that ensure hiring of Program graduates
2) Minority workers "put in the front lines of environmental cleanup"
3) Absence of an environmental health tracking system for workers at contaminated sites

IV. Filling in the Gap

Other than concerns expressed by the caucus, little public attention has been paid to the negative EJ implications of The Program. One possible explanation for this lack of perspective is the assumption that is often made about green industries (i.e. brownfields cleanup firms, recycling facilities, etc.). Negative impacts from the operations of these industries run the risk of being overlooked when it comes to EJ analysis due to the belief that all green industries are environmentally just. David Pellow, who conducted a study on the EJ issues associated with the recycling industry, argues that on the contrary, "green industries deserve extra scrutiny from activists, researchers, and policy makers precisely because of the eco-responsibility image they enjoy."[53]

I also discovered in my background research that current publications do not provide substantial perspectives from Program participants regarding the burdens

[53] Pellow, P. 125

associated with the training. Realizing this deficit ignited my curiosity about participants' perceptions of The Program, and their own articulation of their experiences. My research questions became:

1) How do participants perceive the benefits and/or burdens associated with The Program?
2) How do these perceived benefits/burdens correlate with EPA's Program goals?
3) What insights do participants' experiences offer regarding the complex EJ issues embedded in the structure of The Program?
4) Are participants trading their health for wages? If so, are they making this tradeoff knowingly?

The next chapter provides information about the two Programs that I researched.

– Chapter 4 –
Case Studies: Providence and Bridgeport

Groundwork Providence: Providence, RI

i. Program History

Groundwork Providence (GWP) is a small environmental non-profit organization that works to sustainably improve the urban environment. Facilitating EPA's Program falls under GWP's mission to stimulate environmental and social change in the greater Providence community. Their other programs promote youth education and employment, biking and nature trails as forms of transportation and recreation, and local recycling infrastructure.[54]

GWP is currently administering The Program under its second two-year grant from EPA. The first grant recruited participants from three predominantly minority communities in Providence, with poverty rates as high as 47 percent. The current grant focuses on four communities in Pawtucket, where poverty rates are as high as 57 percent. The recruitment areas in both Providence and Pawtucket are Federal Enterprise Communities – distressed neighborhoods that have been targeted to receive federal aid to promote private sector development, job growth, and entrepreneurship. Nationally, many

[54] http://www.groundworkprovidence.org/programs.html, 1/9/06

Enterprise Communities have identified brownfields as impediments to revitalization, and have received EPA funding to assess and cleanup brownfields, as well as administer brownfields job training.[55]

GWP reviews applications from residents of these communities, as well as from underemployed or unemployed individuals who will economically benefit from this training and employment. College graduates are ineligible for GWP's Program; however, participants must have a high school or general education development diploma (GED), and must be able to perform at tenth grade level in literacy and basic math. Applicants unable to meet these academic requirements are referred to programs for basic skills training and GED preparation.

Providing free job training to these neighborhoods fits with GWP's mission to build sustainable communities through the creation of community partnerships that promote both environmental protection and social well being, including increased employment. GWP sees environmental protection and job creation (interests that are often thought to conflict) as not only being joint goals, but as being crucial to sustainable community revitalization.[56]

GWP has developed many community partnerships that contribute to effective job training to vulnerable populations – community organizations, for example, that provide basic skills training for under-educated participants. GWP is also in the process of developing partnerships with local universities and colleges so that graduates have the opportunity to enter into additional technical training or environmental science courses should they wish to further their education.

[55] http://www.epa.gov/brownfields/html-doc/ez_ec.htm, 1/11/06
[56] http://www.groundworkprovidence.org/, 12/6/05

Another strategy GWP utilizes is continuous contact with Program participants throughout the training. In addition to assembling The Program's partners (18 in all) and organizing the subcontracting, GWP's Program Manager, Katie Kahler, recruits and interviews applicants, instructs students in non-technical training such as interview skills and resume writing, assists graduates with their job searches, and tracks graduates for at least one years. After this time, post-Program support services are available to graduates if they initiate contact with Kahler.

Drawing on the strategies outlined above, GWP aims to graduate 45 Program participants per year, and aspires to place 75% of graduates in environmental cleanup employment. GWP identifies three areas that pose the biggest challenges to meeting these goals:

1) Recruitment / Retention – How do you recruit people who will stay invested in The Program? How do you keep participants invested?
2) Post Program Tracking – How do you most effectively help graduates transition into long-term employment, particularly when there is little funding to provide this support?
3) Grant Stipulations – How do you expand Brownfields education and community outreach when there is no EPA funding for this initiative?

GWP's Job Training Program consists of between eight and ten weeks of technical classroom training that certifies participants in lead and asbestos remediation, the handling of hazardous materials, and non-technical training that helps participants enhance their employability, such as interview skills and resume writing. There is no on-site training due to the liability issues associated with bringing uncertified participants

into a hazardous work environment. There are no classes specifically dedicated towards the brownfields problems that are impacting the participants' own communities, however some of this information is implicit in other parts of the training through the use of local examples to illustrate brownfields issues.

GWP has a very high post-Program employment rate in the cleanup field of approximately 90%. However, an average retention rate of 54% results in only 50% of participants who enter The Program eventually finding work in the field. These percentages are expected to change soon, as the class that was about to graduate in December 2005, had a much higher retention rate of 92%. These statistics will be explained in more detail in Chapter Five.

ii. Local Brownfields

Providence is the second largest city in New England and has been an established industrial and commercial center for much of its history. The downfall of the textile and jewelry industries in the middle of the 20th century devastated the city's economy, and led to its federal designation as an enterprise community.[57]

In RI, 550 brownfields are currently being addressed, and 700 have already gone through remediation. As a result of this development, 958 new jobs have been created, 97 businesses have been created *or* preserved on brownfields properties, and property value of remediated sites is now over $80,000,000, while over $2,000,000 has been generated in sales and property tax, and almost $4,000,000 in income tax revenues.[58]

[57] Brownfields 2005 Grant Fact Sheet, EPA-560-F-05-074, May, 2005, available at: http://www.epa.gov/brownfields/05grants/providence.htm, 12/1/05
[58] http://www.epa.gov/brownfields/pubs/st_res_prog_report.htm, 10/20/05

The WorkPlace Inc.: Bridgeport, CT

i. Program History

The WorkPlace Inc. is one of Connecticut's five regional Workforce Investment Boards. The organization runs multiple job-training programs, which are funded by federal grants from the US Department of Labor and EPA, as well as private contributors. Through these programs, WorkPlace seeks to develop a workforce in Southwestern Connecticut that is "well educated, well trained, and self-sufficient…that can compete in the changing global marketplace." Part of this objective is to help vulnerable persons achieve employment and economic self-sufficiency. [59]

Workplace finished its second Brownfields Job Training grant from EPA in August 2005, and has submitted a proposal for a third grant that would target participants from the Stamford, Connecticut area. Under the first grant, WorkPlace recruited participants from Bridgeport; the second Program was expanded to recruit from the larger area of Naugatuck River Valley. Bridgeport is Connecticut's most densely populated city, with a poverty rate of 25%, and population that is 50% minority. [60] The city has the second highest unemployment rate in the state, and between 2001 and 2003, it lost more jobs than any other Connecticut metropolis. [61] Although this trend is most dramatic in Bridgeport, it is prevalent across the state. Connecticut lost almost six times as many jobs in the two-year period following the national recession in 2001, than during the recession itself: 6,300 jobs vs. 35,600. Although the recession was eight months long, and the recovery period was 19, Connecticut was one of only nine state to lose more jobs in the

[59] http://www.workplace.org/aboutus.asp, 11/5/05
[60] Brownfields 2004 Grant Fact Sheet, EPA-500-F-00-254, March, 2004, available at: http://www.epa.gov/brownfields/success/success_adpss.htm, 12/2/05
[61] http://www.ctkidslink.org/pub_detail_43.html, 12/12/05

second time period, and among these nine, Connecticut was one of the most extreme. Of the 35,600 jobs lost, 26,000 were in the manufacturing industry, resulting in underused or abandoned industrial facilities, many of which are considered brownfields. Given the drastic economic decline Connecticut has recently experienced, and continues to be burdened by today, WorkPlace's initiative to generate a workforce with the skills necessary to remain sustainable is a vital contribution to the Bridgeport community.

Angela Porter is WorkPlace's Project Implementation Manager. She oversees the grant application process, forms partnerships with other organizations (similar to those of GWP), ensures that Program objectives are being met, and provides EPA with quarterly Program reports. She also monitors the subcontractors who are responsible for the other management aspects of The Program, as well as the technical training.

The Career Resources Department at WorkPlace does the initial Program recruitment and screens interested applicants. After screening approximately 100 applicants, 33 individuals "with good potential" are then referred to a company called Environmental Management and Geological Consulting (EMGC) that is a subcontracted technical training provider. Other individuals are referred to alternative job training programs. EMGC conducts interviews with Program candidates and selects a final class of 18. The main purpose of the interviews is to determine if the candidate is "hirable." Characteristics such as previous employment and education are considered, as well as means of transportation, since much of the work requires commuting to different construction sites. In addition to the interviews and technical training, EMGC is also responsible for job placement and tracking Program graduates.

The extent of responsibility placed on EMGC increased between the first and second Programs. The idea was that EMGC would not only be more qualified to choose applicants who would succeed in the training, but that since they are more familiar with the environmental field, they would be able to tailor resumes.

Similar to GWP, the WorkPlace Program is eight weeks of lead, asbestos, and hazmat training. The course ends with resume and online-job-search training. Workplace also offers an extended three-week curriculum that is funded by corporate donations. This training covers wastewater treatment, mold remediation, and Commercial Drivers Licensure (CDL), which allows trainees to seek employment transporting hazardous wastes – a job that also requires hazmat certification. This licensure provides employment opportunity in the colder months of the year when remediation work is less available. In addition, EMGC has set up a credit transfer system with two community colleges whereby students can obtain college credit for the training. On average, three to five participants per course have followed through with this opportunity, but WorkPlace hopes to increase this percentage by emphasizing this opportunity during future recruitment. WorkPlace aims for a retention rate of 91% and a job-placement rate of 83%. Its most recent grant yielded a retention rate of 85% and a placement rate of 74%.

ii. Local Brownfields

Bridgeport, city of 140,000 located on Long Island Sound, has been an industrial hub since the early 19th century. [62] The city was once estimated to have 400 brownfields within its borders. Today, no undeveloped land remains within the city that is not contaminated. Brownfields' remediation will provide land for housing, commercial-use, and green / recreational space. Residents identify crime as one of the major problems associated with brownfields in their city.

[62] Brownfields 2004 Grant Fact Sheet, EPA-500-F-00-254, March, 2004, available at: http://www.epa.gov/brownfields/success/success_adpss.htm, 12/1/05

– Chapter 5 –
Findings and Conclusions

I. Interview Results and Analysis

The following sections outline how participants from the GWP and WorkPlace Programs articulate their job-training experiences. For each Program, I will provide a brief overview of the insights I gained from the interviews, followed by a more detailed analysis of how this information relates to the questions I set out to answer. To structure this synthesis, I will examine the interviews through three EJ lenses that were described by Solitare and Greenberg in their 2002 study on the EJ implications of EPA's Brownfields Assessment Grants.[63] The economic lens evaluates EJ through the availability and quality of jobs and development of the economic infrastructure. The environmental lens looks at the balance of benefits and burdens that characterize the local environment, including environmental health, quality of life, and the association between environmental hazards and poor or minority communities. The process lens focuses on community empowerment through its participation in decision-making and development planning. Solitare and Greenberg emphasize this perspective by citing research that found the process to have equal or more impact on individual well-being relative to the

[63] Solitare and Greenberg, P. 3

outcome.[64] While these lenses do not impart analysis, they provide a framework through which analysis can be made.

As I mentioned in Chapter Two, my interviewee sample contains more "successful" graduates than average. This means that the experiences I am about to talk about, and the following conclusions I will draw, disproportionately relate to individuals who have found work in the environmental cleanup field as a result of The Program; they do not represent the whole population of participants, and do not necessarily represent experiences outside of the GWP and WorkPlace Programs.

Groundwork Providence Program

My most significant finding from the 15 interviews I conducted with current and past GWP Program participants was that the majority of these individuals had previously been working in jobs that exposed them to environmental health risks. Furthermore, many people had not previously taken adequate safety precautions, and were not fully aware of these risks until they participated in the course. Although I found that no graduates are currently working in their own communities – which draws into question whether The Program is directly influencing the rate of cleanup in the target communities – I did find that most participants are using greater measures of safety precautions in both their home and work environments. Additionally, many participants have been sharing the course's health and safety information with other members of their communities.

[64] Solitare and Greenberg, P. 3

The Economic Lens

In this section, I will summarize and analyze the interview results pertaining to economic development, and more specifically, the job availability, job quality, and infrastructure development resulting from this Program. My discussion will include the economic incentives to participate in The Program, the employment gained as a result of participation, the employment disappointments experienced by graduates, long-term employment goals, and infrastructure development.

a. Participation

Prior to The Program, 75% of participants were working in manual labor jobs, and 100% were looking for more gainful employment. One interviewee had been working in the dry-cleaning business for 15 years, and was only making $10 per hour, with which he had to support two children. Another interviewee described his previous employment as, "basic jobs here and there – nothing with great responsibilities, such as the environmental field." This is how he elaborated on his economic situation prior to The Program:

> There was a lot of shortages, unemployment and what have you was up drastically. And if you don't have any types of skills and what have you, then a lot of the people who come from the places where I grew up, they have limited options. So when this opportunity came along, it gave people in my situation a way to go out there and gain a skill trade and provide them with an easier way to gain employment.

The incentive to participate for this interviewee and many others was to increase their hourly wages, as well as their opportunities for more satisfying employment.

b. Employment Gained

All the graduates whom I interviewed are currently working in the environmental cleanup field, and many expressed the life-altering results of the course. One interviewee said:

> I now have a certification that says I know what I'm doing, and when I say I know, I know. This Program came along and showed me that there are opportunities out there to have responsibilities.

Many of the other interviewees expressed similar sentiment about the opportunities afforded by The Program. "You can see the results," one person reported. "You feel like you're doing something positive…and it pays well."

Most people said that when work is available, wages are what they expected or more. "Wages are 10 times better than I expected," one interviewee stated. "Sometimes we make more than a person with a four-year degree out of college." Another person said:

> Sometimes they [wages] are extraordinarily good. It's really cool to be working class and at times to be making good money. It's hard to believe if you're underemployed or unemployed and you're struggling, and sure enough it's true.

On average, wages that workers are receiving are higher than those they received previously. A few interviewees conveyed why good wages are important in this field. Not only will you work harder, one person said, "but you'll be more careful." This statement implied that high wages allow workers to take more time to complete tasks carefully and are a reminder that the work is potentially dangerous and deserves serious attention.

Interviewees also expressed the satisfaction that comes from professional expertise, particularly when such expertise results in escaping the un-skilled labor

market. After completing the lead component of the course, one current participant said to me:

> I'm definitely going to be using this…you know I've got my first job this weekend, and there will be plenty more. I'm going all out with this; I'll have the pamphlets out and I'll go by the protocol!

Working in the environmental cleanup field also has moral integrity for many participants, which adds to the quality of the jobs in this field. This idea will be addressed further in the Environmental Lens section.

Although all interviewees are working in the cleanup field, no individuals are working in their own communities, and some have only been able to find work out-of-state, or have taken out-of-state jobs in the past. It is also important to note that the sample is not necessarily representative, and that there are graduates who have gone through The Program and subsequently not entered the field. One graduate said that he has friends who have returned to driving cabs, working as security guards, or even selling incense on the corner because these jobs have provided a more steady income. He, himself, still works in the field, but supplements his income with a security guard position.

The overall statistics for the GWP Program also indicate that the sample was not representative. GWP has a post-Program employment rate in the cleanup field of approximately 90%. However, an average retention rate of 54% results in only 50% of participants who begin The Program eventually achieving employment in the field. These percentages are expected to change soon, as the class that will soon graduate has a much higher retention rate of 92%.

The following section will elaborate on aspects of The Program that participants found frustrating.

c. Shortfalls

Half of the graduates said that there are fewer full-time remediation jobs available within the state of Rhode Island than they expected. Many people have found contract jobs through temporary agencies or construction companies, but emphasize the deficit of local full-time employment, and the frustrating pattern of being hired for a five-day project and subsequently laid off. One person explained the situation like this:

> I don't want to think it was a racial issue, but the field was locked up. They have their own people, and they aren't letting anyone else in the field. I know of projects that were supposed to be hiring from the community, and everyone I know from the last three classes went down there and were turned down.

Interviewees also expressed frustrations associated with re-licensing, which workers must do annually for each certification (lead, asbestos, and hazmat). There is little incentive to spend $50-$100 on re-licensing, several graduates explained, "when you're between jobs and struggling."

Another complaint about the field was that co-workers and project supervisors do not always follow safety procedures, which can endanger other people on the remediation site. One graduate told me that he has let his asbestos abatement certification expire because he knows someone who went into the field and said the job was so dangerous due to faulty safety practices that he quit the next day. Another graduate knows a worker in the field who was pressured by the contracting company to supervise a team of

unlicensed workers. When I asked one interviewee whether he encounters adequate safety procedures in the field, he burst into laughter.

Finally, there were some discrepancies between past and present participant perspectives. For example, two of the men who are currently participating in The Program are resolute that they only want to work in-state, and even hope to work in their own communities. What graduates have found, however, is that in-state work is not always available, and many have become resigned to take out-of-state work to supplement the local employment opportunities. "When I went through The Program, I expected that there'd be a lot of work in the field, and that I'd never be without work," one graduate related. It was only after he began looking for work that he gained a more accurate sense of the opportunities in the field. Other current participants had specific preferences in job type, whereas many graduates have a more weathered perspective of accepting whatever employment is available. Interestingly, two graduates reported that they knew all along that obtaining work in the field could be a burdensome process. These conflicting experiences make it difficult to discern whether the discrepancy between current-participant and gradate expectations is based in GWP's portrayal of employment opportunities in the field, or is simply due to wishful thinking.

d. Long-term Goals

Most interviewees do not imagine doing abatement work (described by interviewees as "back-breaking work," and "being the man in the hole") for the rest of their professional lives. People either want to become an inspector or a supervisor, become self-employed, or move out of the field altogether. Some graduates have already

started on this upward trajectory. One person is now a self-employed lead inspector, and another just began the lead inspection apprenticeship with the city of Providence (another course facilitated by GWP). A third person explained that one of the assets of this industry is its diversity of job positions:

> The field is so large that it's really a learning process. There are additional certifications…workers are able to always move on to something else. That's the most exciting part for me, because I get bored very easily, and I learn quickly, and when I pick something up and feel like I've mastered it, then there's something new to do in this profession – it's never the same. Not the same monotonous work over and over again.

e. Infrastructure Development

The idea of infrastructure in this framework has to do with municipal economic development. EPA attempts to strengthen the brownfields' redevelopment infrastructure by tying job training Programs to other brownfields' initiatives. (Facilitation of The Program must be located in a city that has previously received an EPA Assessment, Revolving Loan, or Cleanup grant). Interviewees alluded to this connection by acknowledging the positive reception they have received from local employers. This collaboration, however, could be done more effectively, a point that will be further elaborated in the Recommendations section.

Additionally, one of EPA's implicit intentions (apparent through the resume and interview training in The Program's curriculum) is to provide infrastructure to participants' lives. Through resume building, interview training, and skill acquisition, participants are given a foundation on which to build steadier lives. This infrastructure includes economic as well as social benefits. As one participant stated, "I think this

Program sets most people on a track of doing a bit better than they could have been doing otherwise."

The Environmental Lens

The following section outlines The Program's potential benefits and burdens associated with the local environment, including environmental health, quality of life, and the association between environmental hazards and poor or minority communities. Subsections focus on incentives for participation and participants' perceptions of The Program's benefits and burdens, including dangers associated with the field and benefits to the targeted communities.

a. *Reasons for Participation*

More than half the interviewees were specifically interested in this type of work because of their concern for the environment, their desire to contribute to environmental cleanup, and their motivation to increase their environmental awareness. One person commented:

> I was kinda already up on the lead and asbestos situations and I wasn't too happy about it because a lot of the houses in my neighborhood were built before 1976, and a lot of the people in my neighborhood don't have the money to go and get these things rectified, so their children and everybody else on the property were being infected, so that concerned me a lot.

Another interviewee expressed his concern that "humans produce more waste than we can dispose of." This field, he said, helps to combat that problem.

b. Perceived Benefits and Potential Burdens

Interviewees frequently cited health information about lead and asbestos when I asked what they gained from the course. Not only was this information applicable to their work and home environments, but it also made them realize that previous jobs in construction, restoration, or painting had exposed them to risks of which they had not been aware. A common phrase among these interviewees was, "I've done a lot of things that I wouldn't do now." One person admitted to me that before he took the course, he did not think adults could get lead poisoning. "I was in the dark about a lot of things," he said, "and I could keep on doing what I was doing, and breaking all of these laws. I could claim stupid because I really didn't know." A current participant who has been roofing for past six or seven years, said:

> I've worked jobs where we ran into asbestos and we didn't have no training and the company just told us to rip it out and dispose of it like we was disposing of anything else. They didn't inform us of nothing, that we were at risk and stuff.

One participant who is currently in the class has worked for years restoring historic houses. After recently learning about lead poisoning and the safety precautions to take when working on old houses, he went to the hospital and got tested. "If someone had told me to put the mask on, I woulda put the mask on," he said, "I went a whole year without a mask." His blood lead levels were so high that the doctor retested him – the hospital had never seen levels that high before. The participant is now taking all the safety precautions he can to get his levels down. "I'm gonna learn as much as I can about it now, because now I'm contaminated," he said. "Without this course, I never would have been tested." Another interviewee said that he was previously aware of the amount of lead in his community, but had no idea of the extent of danger associated with

exposure. In addition to recognizing environmental contaminants, participants talked about their acquired ability to mitigate hazards. This includes following safety procedures more stringently in the workplace, they said, as well as safeguarding against lead poisoning in their homes, particularly if they have small children.

Further enhancing the participants' quality of life was the opportunity for increased wages, as well as the self worth that can result from working in the environmental cleanup field. One person summed it up by saying:

> The self-gratification I get out of it – knowing that I'm doing something for myself and my family. I'm not walking down the street smoking cigarette butts, watching them wash down the drain, which is going to go into Narragansett Bay, I'm not throwing cans and plastic bags that can't be biologically broken down. It just makes you conscious of things, because no one ever thinks about that – they'll eat a bag of potato chips and throw that wrapper on the ground, and that doesn't break down for years and years and years. This awareness was strengthened by The Program.

The education workers receive regarding health risks and safety precautions, and the indirect education to others in the community, help to improve the health of the targeted population while reducing disproportionate environmental harm. Interviewees seemed equally as interested to apply what they were learning to their own homes as to their work environments.

When I asked interviewees about potential burdens associated with The Program, many people talked about the inadequate safety measures practiced by others, a trend that poses risk to all workers. In addition, those people who had not previously worked under conditions of environmental risk acknowledged that employment resulting from The Program has the potential to expose them to levels of contamination that they would not be exposed to otherwise. These aspects of The Program can decrease the health of

participants, while increasing the disproportionate burden that these populations face. Quality of life can also be reduced by the necessity of working far from home, and the sporadic income characteristic of contract work.

c. Dangerous Work Environment

This field of work involves exposure to dangerous materials. The double standard of legal exposure explained in Chapter Three increases the likelihood of exposure to contaminants and means that workers will potentially be exposed to levels of contaminants that would not be permissible for the general public. The blood-lead levels considered to be poisonous for workers, for example, are higher than what is considered lead poisoning for the general public. In response to my open-ended question regarding participants' reactions to working in a dangerous field, almost all interviewees emphasized the safety practices they learned in the course, and the value they now place on following these practices. One person said:

> Safety has to be on your mind all the time, all the time because sometimes you're dealing with things that you can't see. So you have to make sure your respirator's working, and you're wearing the right suit and boots, and washing off before you come home, because you may not be able to tell it's on your body or that your spreading it to other people.

Another interviewee explained:

> You always gotta be concerned because when you're not concerned, then that's when there's gonna be a danger. If you're not concerned and not worried about your safety, then you're not going to use the proper procedures to get these things remediated. So that's one of the most important things to keep in mind is the safety, not only for yourself but for the other people around you…If you do what you're supposed to do and pay attention to the training, then 90% of the time, you'll be fine. Cutting corners, and not paying attention is when you get in trouble.

Many other people shared this attitude; they did not seem deterred by the hazards, but expressed the importance of keeping them in the forefront of their mind.

d. Community Benefit

Although there was an interview question regarding the safety and health knowledge of other community members, many people eagerly talked about this topic unprovoked by my question. Almost everyone said that they talked to friends, housemates, family members, co-workers, and homeowners about the safety and health issues that they had learned of in the course. One person told me about a friend who received an official notice about lead abatement in the mail and had no idea what it meant. The Program participant had to explain the abatement process to his friend. Another person spoke of informing friends about the lead testing process. Other interviewees told stories about passing on safety knowledge to coworkers. One person described the responsibility he feels now that he has this knowledge:

> Now I know that some things are definite hazards, and so you have to inform other people, and you have protect yourself and other people that you're working for. Now when I see someone without a mask, I tell them, you know, that could be cancerous. That gear is there so you can use it.

Another person commented similarly, saying, "You have to protect yourselves all the time, and don't allow anybody else to be stupid with their protection – take that responsibility 100% of the time."

The Process Lens

The process lens looks at community empowerment through residents' participation in decision-making and development planning. The Program is based on technical skills and does not explicitly address or encourage this aspect of brownfields cleanup. However, I did ask interviewees one question that indirectly relates to the process lens: "Are brownfields in your community being addressed adequately?" All responses were negative, ranging from "Public knowledge should be increased," to "Vacant lots aren't being addressed properly," to "Most development is in affluent areas," to "Brownfields are only addressed when it's convenient for those in business and development and government."

While The Program does not explicitly encourage participation in decision-making and development planning, it does provide a foundation of knowledge about brownfields from which concern for participants' communities can spring. One person, a house painter, who is taking the course now, remarked:

> I think they should have open groups or put up fliers, and I know that a lot of people don't care, but I just think they should make some awareness available to other people even when they don't want to hear or listen to it. They should have open access to people without computers, without phones, without TVs.

Significantly, this is the same person who previous to the course did not think that adults could be lead poisoned. Now, he says, he is determined to make the jobsite safer for himself, for the people working under him, and for the homeowners.

The WorkPlace Inc.

The interviews from WorkPlace produced less obvious trends than those from GWP. Only half of the interviewees are currently working in the field. While some people attributed their employment struggles to the lack of local availability and insufficient Program support, others said that jobs were available as long as you committed yourself to looking, and that the support offered by Program staff was a major benefit of the course.

Relative to the GWP interviews, there was less dialogue regarding the application of safety and health information to daily lives, and fewer interviewees talked about passing on safety and health knowledge to other community members. Overall, there was more dissatisfaction among participants relative to GWP, and interviewees attributed their qualms to inadequate post-Program support as well as low wages and scant employment opportunities.

The Economic Lens

As with the GWP results, the following discussion will analyze the economic incentives to participate in The Program based on job availability, job quality, and infrastructure development. Subsections focus on employment gained, Program shortfalls, long-term goals, and infrastructure development.

a. Participation

Similar to the GWP results, all interviewees said they were looking for more gainful employment. Some had recently been laid off, one had just graduated from

college, one took the course solely to obtain his commercial drivers license. Different from the majority of GWP participants, however, who had previously been part of the unskilled labor force, many WorkPlace interviewees had held high-level jobs or received college education prior to their participation in The Program. One interviewee had been an aerospace engineer for the majority of his adult years; now in his early 60s, this participant was finding himself to be less employable in that field, and decided to obtain other skills. Another interviewee has two associate's degrees, but his search for employment in those fields was unfruitful. The potential impacts of a relatively higher educated and more skillful participant population will be discussed further at the end of this chapter.

b. Employment Gained

Five of the ten interviewees are currently working in the cleanup field, though not within their own communities, and sometimes with a long commute. Two of these graduates have fulltime jobs, and two are primarily working contracted construction jobs. A fifth graduate will begin working for the City of Bridgeport in the spring as a staff member for a new Brownfields Job Training Program. The other graduates have returned to their old jobs, or have found work in other fields. Significantly, three of these graduates chose not to work in the field because the work was more dangerous than they expected, or they felt that the wages were insufficient to offset the dangers. These examples demonstrate that the quality of jobs available is poorer than many interviewees expected. One graduate who has returned to work in an auto garage, said, "There was no

work whatsoever in the field." His only job offer was to remove asbestos for $10 per hour and he declined. Another interviewee said:

> It seemed like the market fell apart as soon as I graduated from the course, there weren't any jobs available. It seemed like hazard material drivers and water treatment people were the most popular jobs around.

Other interviewees made similar statements about lacking the experience and qualifications for the jobs available. Wastewater training and CDL certification require extra training and not all participants graduate with these assets. Furthermore, two interviewees said that when jobs were available, employers were only looking for college graduates. Another person said that he had trained to be a supervisor and manager, but was only getting offers to do abatement work.

Two graduates said that The Program staff helped them set up interviews with potential employers and eventually find a job. One of these interviewees cited the contact with the training provider as the most beneficial non-technical aspect of The Program. It was this support from EMGC, he said, that led him to finding a fulltime job in the field.

c. Shortfalls

In addition to their disappointments concerning the dangers in the field, many graduates voiced their frustrations at the lack of permanent, well-paying work. One of the construction workers, for example, said that all he is able to find is contract work that lasts no more than a few days or a week. Other graduates said they expected to make $20 an hour, but in reality, most people aren't making more than $12. "A lot of people were pretty upset," one woman told me, "seeing how they just left jobs where they were making 45 or 50 thousand a year in order to take this course." Another interviewee said

that not finding work in the field was frustrating because he could have spent the course time going back to school and getting his associate's degree.

Many interviewees also identified the lack of local-employment availability as a shortfall of The Program. One person summed it up by saying:

> The area where The Program is going to be taught, I really think there should be a lot more job opportunities present there, rather than the town or next town over, so that benefits can go directly into the local community.

Other people said that they found employment that was over an hour away or out-of-state, but they weren't willing to make the commute.

Finally, six interviewees said that it was very difficult to find work after graduating, and they felt unsupported by The Program staff in this transition period. Two people acknowledged that The Program sent out mass emails with job postings, but that the jobs did not pertain to the individuals' qualifications. Fed up with these emails, one of these graduates sent several responses back to The Program staff indicating that he didn't have the qualifications needed for these jobs, but he never received a response. Another graduate expressed his frustration this way:

> There's no direction of where companies hire or which companies hire to do this type of stuff. Is it in-state? Is it municipal? Is it private? You don't know nothing. I had to research on my own to find companies that do this type of abatement stuff, but they didn't want to hire me because I didn't have any experience, even though I had certifications. But how am I supposed to get experience if no one will give me a chance?

Many other graduates echoed this experience, saying that training alone *without* work experience and without proper support from Program staff, led them to a dead end. Interviewees expressed their wish that The Program had allocated more time for

interview and resume skills, as well as post-Program support. Gaining tools in these areas, they said, would have helped them secure jobs in a competitive field.

d. Long-term Goals

Those people who found work in the construction and abatement fields said that they hope to move up in the field one day. Interviewees working *out* of the field said that they hope to eventually use the skills they gained in the course, preferable in inspecting or supervising rather than abatement. Similar to the results of the GWP interviewees, these goals demonstrate that WorkPlace Program participants often think of the entry-level positions as temporary, and hope to secure better paying and safer positions in the future. These desires are important to consider when analyzing The Program from the context of the CWD debate, which will be talked about more at the end of this chapter.

e. Infrastructure Development

The ideas of municipal and "personal" infrastructure that I described relative to GWP also apply here. It seems, however, that WorkPlace graduates are not benefiting in these respects as much as GWP graduates. As I mentioned above, fewer WorkPlace graduates have successfully found stable and satisfying employment as a result of their participation in The Program. In addition, a number of graduates were dissatisfied with the lack of interview preparation, resume writing, and post-Program follow-up. The basis for these infrastructure shortfalls will be discussed further at the end of this chapter.

The Environmental Lens

The following section outlines The Program's potential benefits and burdens associated with the local environment with subsections focusing on incentives for participation and participants' perceptions of The Program's benefits and burdens, including dangers associated with the field and benefits to the targeted communities.

a. Participation

Echoing the GWP participants' responses, four WorkPlace interviewees attributed their interested in The Program, in part, to their environmental concern. One person said, "Obviously there's a lot of waste being generated, and you can't just dump it anymore." Another explained:

> I wanted to know a lot about environmental hazards and I was really interested because I'm from the northeast and there are a lot of abandoned factories. I'd like to do a little bit of work as an advocate as far as industrial cleanup and…to, you know, make the community more aware that these companies had operated here for years and in some cases, they've literally just shut down the lights and left, you know, leaving whatever contaminants are in the building, and possibly spoiling the ground and that kind of thing.

A third graduate said that he wanted to learn about the environmental hazards created by his generation. A fourth had been working in the construction field, and wanted to learn about the safety and health precautions associated with his work environment.

b. Perceived Benefits and Potential

When I asked interviewees how they had benefited from their participation in The Program, half of the graduates said they learned about local environmental hazards. One person said that before The Program he had an awareness of some of the local hazardous

sites, but that he did not understand the scope of the environmental impact until after he went through training. Another person concluded, "They taught me a lot of things that I didn't know was going on in my community, and they also taught me the technical background to see what was going on, not just know about, but understand about what it was."

For graduates who secured employment in the field, benefits include increased wages and safety knowledge. Interviewees also acknowledged that benefits of participation extend beyond gaining employable skill. One graduate, who has not found work in the field, said he still uses some of the health and safety knowledge he learned in the class, such as letting the tap water run for 30 seconds before use in order to wash away lead buildup in the pipes, and wiping down window sills to reduce dust with lead particles. This same person said that the course gave him a more realistic sense of what it takes to cleanup sites:

> We did some minor drilling and testing of ground waters, so now, driving by, you'll see a factory, and it kind of blew my mind to think 'Jesus, can you imagine when that factory is completely knocked down how much cleanup there's gonna be?' So you're aware of what could be contaminated.

Another graduate who has not found work in the field says that he still benefited from the course because it updated his knowledge about what his generation created. Now in his early 60s, he worked the majority of his professional life as an aero-space engineer. He was very impressed with the caliber of the course's safety education, and compared it to that provided in the aerospace engineering field. Although he is not working in the cleanup field, he is glad to have the training as a backup to the bio-medical work he is doing now. Another graduate who has not found environmental work also said that he is

glad he took the course. The general knowledge and safety practices as well as the tours of the wastewater treatment plant were very interesting, he said, but he acknowledged that this mere interest probably does not mean very much to the state or EPA, who financed his training. All of these assets can lead to a better quality of life for participants, and may translate indirectly to non-participants. Collectively, these benefits work towards reversing the disproportionate environmental burden inflicting participants' communities.

Half of the graduates, however, said the course did not contextualize the training in relevant local issues. One man said he learned about local brownfields only because he spoke privately with instructors after class. "These conversations were what really cued me in on the exact scope of how widespread this industrial contamination really is," he said. Another woman explained that the training would have been more effective if it had focused on local brownfields:

> They need to help people realize that there's actually a need for this [cleanup training]– which I know there is – it just didn't seem like there was a need for it around here. If they actually told you buildings in New Haven or Bridgeport that had asbestos or lead or whatever, if they actually told you about that, then people would stick more towards trying to use what they learned in the class rather than just trying to get a job.

In other words, she said that people needed a local incentive to remain in a field that does not always provide steady employment.

As this woman alludes to, a prominent risk associated with The Program is the sacrifice of previous employment to become trained in a field in which there is inadequate employment opportunity. As I said in the GWP section, quality of life can be reduced by the necessity of working out-of-state, and the inconsistent income associated with contract work. In addition, the levels of exposure associated with this work are also

potentially burdensome. While some participants may have been exposed to similar hazards in previous work, this trend was less apparent relative to the GWP results.

c. Dangerous Work Environment

Three participants expressed concern about working in a hazardous field. One graduate was interested in being an industrial hygienist, but could only find work in abatement, and so has chosen employment in a different field. Another interviewee said that the only reason he took the course was to become CDL certified. When I asked him about the other certifications he graduated with, he said, "I wasn't going to risk my life doing lead or anything else." Another graduate, who returned to working in the automotive field, echoed this attitude:

> I'm not working with lead or asbestos for 10 dollars an hour. It ain't working. I've got kids. I work in the auto-body field, and everything is hazardous, and I'm asked to clean up asbestos for even less, I don't think so…I wouldn't recommend the course to anybody.

Other interviewees had similar sentiments concerning the level of compensation people were receiving for doing dangerous work. "In the beginning," one said, "they told us that because of the health risks, we'd get paid a lot more, but then afterwards, we got paid the same rate you would do any other job and yet you're putting yourself at risk." Another person acknowledged that it is very dangerous work, and that there are lots of stories of people getting cancer as a result of this work.

The unrealistic expectations that many participants had concerning levels of risk, and the resulting wages, suggests that some participants did not have adequate knowledge to make an educated decision about their participation in The Program and their future employment in terms of the CWD tradeoff.

d. Community Benefit

Three interviewees drew a connection between The Program and community benefit. One person thought his community has benefited because the participants "don't dump stuff anymore, and don't pour paint and household waste down the drain." Another person does not think communities benefit economically because job availability is so poor, but he does think that the community benefits indirectly from the environmental awareness that the course provides. A third interviewee, who now works in real estate, also acknowledged this aspect of The Program. The course information, he said, allows him to inform customers about hazards and contaminants, as well as the environmental problems for which owners and renters can be held responsible.

The Process Lens

The process lens allows a look at community empowerment through participation in the brownfields' redevelopment process. As explained before, The Program focuses on technical skills, but I asked interviewees if brownfields in their own communities were receiving adequate attention. As with the GWP results, there were no positive responses to this question. One person explained that the city does not do enough general public education concerning brownfields. He elaborated to say:

> This is important information now because of all the new buildings being made, all the renovations, and economic development that's going on, I think people should be more aware and this should start from a younger age. Most of the people affected by lead and asbestos and stuff are the younger generations because they're all into everything. So the parents of young children and the teenagers who are hanging out and doing stuff in [brownfields] and who just aren't aware that this isn't a cool place for them to be because it's very hazardous.

Another interviewee thought outreach could be a part of The Program. He imagined presenting information about local brownfields at town meetings or creating a website. As demonstrated by the above examples, The Program did successfully inspire environmental awareness in some of its participants. There is potential for this awareness and value to translate to concern regarding community representation and voice in local brownfields initiatives.

II. Conclusions

The participants' Program perceptions proved to be a valuable tool with which to evaluate EPA's Program goals; the interviews provided insights about The Program that I had not been able to find from other sources. In the following section, I will discuss how the perceived benefits/burdens that were outlined in the analysis of each Program relate to EPA's attainment of Program goals. Again, these comments relate directly to the population of participants I interviewed, and do not necessarily apply to other participants or Programs. After discussing EPA's goals in relation to my findings, I will offer conclusions regarding the EJ issues imbedded in The Program, including the potential tradeoff between health and wages that may result from Program participation.

Goal #1: Foster a Sustainable Workforce

In the experiences of most of the interviewees, this goal has not been achieved. Many graduates said that the employment in the field is more sporadic than they expected, particularly within the state. This, they explained, discourages people from

working in the field and from renewing certifications. Without sustained employment available to graduates, it is difficult to build a sustainable workforce.

Goals #2: Recruit Trainees from Socio-economically Disadvantaged Communities; and Goal #3: Provide Residents of Brownfields-impacted Communities the Opportunity to Qualify for Jobs Developed as a Result of Brownfields Efforts

Both the GWP and WorkPlace Programs recruit participants from communities that are struggling economically, and that have a disproportionate number of brownfields. While the populations of these communities are often overlapping, they are not identical, which is demonstrated by the different characteristics representing the two groups I interviewed. The flexible language of the EPA grant allows for these differences. Although grant applicants must outline the economic, environmental, and social hardships inflicting their target communities, there is no stipulation requiring participants to be from a certain economic or social strata.

GWP narrows their breadth of applicants by making college graduates ineligible to apply for The Program. Approximately 25% of WorkPlace graduates, however, have received two- or four-year degrees, and one participant has received a graduate degree. This implies that there is a range of disadvantage among participants, and brings up the dilemma of whether to stimulate economic growth among the social strata that is already armed with the resources to capitalize on such a boost, or whether help should instead be directed to the most needy populations. One facilitator I spoke with, who oversaw a past Program in New England, identified this conflict of interest inherent in The Program. The Program, he said, is supposed to benefit under-employed residents of brownfields-

impacted communities, but EPA evaluates The Programs' successes based on their retention and job-placement rates. "Do you go after people who have their act together," The Program facilitator asked, "or do you stick to your original resolve to work with the neediest?"

Katie Kahler, GWP's Program facilitator, seems to have found a way to reconcile these conflicting interests. As mentioned in GWP's Program Profile in Chapter Two, Kahler selects her participants from an applicant pool that is small relative to that of WorkPlace. It is difficult to conclude whether the size of the pool is due to less interest or less recruitment; regardless, the resulting group of Program participants is, relative to WorkPlace, less educated, and I speculate less reliable as students and/or workers. The strategies Kahler uses to work with this population are discussed in the next section.

Comparing the structure of the two Programs shows that while both Programs target residents of socio-economically disadvantaged communities, the level of disadvantage affecting participants differs depending on recruitment strategies and Program goals. Although my interview data cannot offer cause and effect conclusions, it is possible that one result of WorkPlace's relatively higher educated and more skillful participant population was participants' greater dissatisfaction with The Program. I speculate that because WorkPlace participants generally have more financial and educational resources, they are less willing to work jobs in which they are exposed to environmental hazards without compensation that they deem adequate. This issue of perceived adequacy demonstrates the CWD's efficacy debate. Both GWP and WorkPlace interviewees consider entry-level positions as temporary and hope to secure better paying and safer positions in the future. However, even with identical professional

goals and similar training concerning the field's risks, more GWP participants have chosen to work in the field despite those risks. Is it fair, this example inquires, to put financially struggling people in a position in which they are weighing their finances with their health? This question is made more complex by the past occupational risks some participants were exposed to; however this does not undermine its relevance to ethical issues associated with the recruitment strategies of The Program.

Goal #4: Provide Quality Worker Training

As demonstrated by the interviews, satisfaction with the quality of The Program's training varies across programs. The majority of the GWP participants were very satisfied with the quality of the training they received, while only some of the WorkPlace participants gave positive reflections about The Program's instruction. I did not explicitly ask participants about the quality of training they received, so these conclusions are inferred from the broader experiences they shared with me, or from more direct comments that interviewees made when I asked at the end of the interview if they had anything else to add. One GWP graduate, who graduated four months ago and has talked to Kahler twice since then, concluded, "Groundwork is doing an excellent job; that's the honest truth. They do a lot to stay in touch with people who have gone through The Program." Another GWP graduate said:

> They should be a group of people who are really noticed for the hard work they're doing. Katie [Kahler] does everything in her power to help people out. Sometimes the hard work goes unnoticed and that's the reality of it. On my part, it didn't go unnoticed. The crew just does an excellent job.

Other GWP graduates mentioned that Kahler has called them up and said, "This looks like a great job for you – you should check it out." Or, "Come down to the office on

Monday and I'll help you update your resume." Someone else summed up Kahler's role in the success of The Program by explaining:

> Katie is like a godsend. If it wasn't for Katie, there'd be a lot of struggling people out there. She has done so much trying to improve the situation of people who are trying to get a better life for themselves. Sometimes she'll call me, and say, 'Bob, I have something for you here.' And that makes me feel good, that she's confident in me.

And still others stated, "I hope Groundwork's reward comes in one big giant lump sum…This is way beyond what I expected," and, "This Program is what I expected it to be and more – the instructors are great."

Kahler attributes GWP's high placement rate (90%) to the support she provides graduates as they transition into the cleanup field. When The Program ends, Kahler arms each graduate with a thick folder of resources that includes information regarding the lead and asbestos licensing process, as well as contact information for potential employers, temporary agencies, the State Laborers Union, Department of Environmental Management, and the Department of Health. More importantly, Kahler says, she assists graduates as they begin their job search, helping them set up interviews, informing them about employment opportunities, and making personal contact with graduates throughout the first post-Program year.

While the retention rate has been low in past Programs (54%), the course that is about to end has a retention rate of 92%. This leap is especially interesting considering that the application pool was smaller for this class than for past classes (13 of 22 accepted vs. an average of 15 of 26 accepted). Kahler believes these improvements can be credited to The Program being more established now, with a more extensive post-Program support system. She also speculates that the interviews I conducted with 10 of

the 13 participants, which required interviewees to articulate the benefits they were gaining from The Program, could have helped to reaffirm their dedication to the course.

When I asked for final words from WorkPlace interviewees, few people spoke about their satisfaction with The Program or its staff. Two people said that the support offered by instructors was the key to their finding employment in the field. Most graduates, however, were disappointed with this component of the course. I was surprised to hear this resounding disappointment, since my impression of The Program previous to the interviews was that the most successful aspect of the WorkPlace Program was the dedication of the president of EMGC, who is responsible for post-Program follow-up. One partner of WorkPlace's partners told me that the president makes a large number of personal calls to potential employees to get her graduates hired. In addition, EMGC has hired approximately 25% of the total pool of WorkPlace graduates for temporary or fulltime positions. (Groundwork has hired one of its graduates for a temporary position.)

One possible reason for the differences in instructor satisfaction between the participants of the two Programs is that Kahler was a familiar face to GWP participants from day one, whereas WorkPlace participants had contact with multiple sources of non-technical support. The continuity that Kahler provided seemed to be received positively, and is a trend that would be interesting to look at in a future study. There also seems to be a correlation between participants' satisfaction with the course and instruction that focuses on local issues, suggesting that when participants are able to ground information in a local context, the technical training becomes more meaningful to them.

Graduates of both Programs were satisfied by the quality of safety training, and

the majority of GWP graduates said that they were able to apply the environmental training to their local environments. While participants of both Programs said that the instructors encouraged them to report poor safety practices, the interviews gave me no conclusive idea of how explicitly the risk exposure decision is talked about as part of the course. One of the GWP classes I observed included a discussion on the legal levels of lead in the blood. The difference between acceptable levels for workers vs. the general public was mentioned. One of the participants asked, "Why do they allow lead levels to get so high before making people get out of the work site?" The instructor did not have a straight answer for the trainee, and the conversation moved on. It seems that this is a relevant aspect of the course and that participants deserve to know intricacies of this topic if they are to make informed decisions about their exposure to risk in the field.

Finally, the discrepancy among GWP graduates and current participants concerning job availability and location, and expected wages, indicate that applicants/participants are not necessarily given adequate information regarding the nature of post-Program employment. A few interviewees, however, made comments that countered this statement, such as "There was nothing really promised to me. I was basically told I had to sell myself with the training I received. It just gave me a broader scope of where to look for work." The potential for this discrepancy, however, is worth thinking about when trying to improve the quality of the training. As mentioned earlier, some current participants had unrealistic expectations of the kind of work and wages this course would lead them to, and WorkPlace grads expressed their disappointment in the misleading information they were given about the field. This is particularly problematic when people quit their jobs in order to participate in The Program. As one current GWP

participant remarked, "I hope this is the right move that I'm making…I quit my job to do this. This is it. You know, I'm 40 years old. This is it."

Implicit Goal: Benefit Targeted Individuals and Communities

As explained in earlier chapters, the ranking system by which grants are awarded demonstrates that part of EPA's objective is to benefit communities impacted by brownfields. In most cases, there are indirect impacts on participants' communities due to an increased employment rate and increased knowledge about environmental health and safety. However, The Program does not necessarily increase the likelihood that brownfields within these communities will be cleaned up.

In addition to looking at EPA's goals from the perspectives of Program participants, my research aimed to apply these perspectives to the complex EJ issues embedded in the structure of The Program. The initial hypotheses I made concerning EJ were that The Program could positively impact low-income and minority participants and their neighborhoods by providing a workforce that would cleanup brownfields in the targeted communities *or* The Program could negatively impact these same populations by increasing harmful exposure in the workplace. I also assumed that if residential harms were not being reduced as a result of The Program, and exposure to workplace hazards were being increased, then participants were making a tradeoff between health and wages.

What my interviews revealed was different from what I expected. It seems that target communities' brownfields are not necessarily being cleaned up as a direct result of

The Program. However, in many cases, the workplace and home environments of participants are becoming safer as a result of participation within The Program, and most participants do not see their situation as a tradeoff (in which they are trading health for wages). Instead, they view The Program as a free opportunity to learn how to protect themselves, and make higher wages as a result.

In summary, my findings challenge my initial hypothesis that Program participation could increase the risk that trainees are exposed to in the field. In reality, many of the interviewees who were *previously* working manual labor jobs perceive a reduction in their exposure to workplace risk due to the course's safety and health instruction. The correlation between participants' satisfaction with the course and instruction that focuses on local issues suggests that when participants are able to ground information in a local context, the technical training becomes more meaningful. Finally, the participants' Program perceptions proved to be a valuable tool with which to evaluate EPA's Program goals; the interviews provided insights about The Program that I had not been able to garner from other sources.

The following chapter will utilize these findings to make recommendations to EPA and Program facilitators.

– Chapter 6 –
Recommendations and Future Study

The following recommendations were generated by my interviews with participants as well as the information I gathered from speaking with Program coordinators and members of the EJ and Community Caucus. The first section is directed at EPA and Program facilitators, and the second section makes recommendations for future studies related to my research topic.

I. Recommendations to EPA and Program Facilitators

EPA has four Program objectives that are not being fully achieved: foster a sustainable workforce; provide quality worker training; explicitly benefit target communities; address EJ issues in target communities. This section will outline how each of these goals can be met more effectively, as well as how goals can be restructured to include additional Program benefits.

1. Build a More Sustainable Workforce

EPA can increase the sustainability of the workforce by promoting more employment opportunities for graduates, which will in turn encourage graduates to stay

in the field. In northern states, EPA should encourage grantees to consider the season when scheduling their Programs. The majority of classes should be held in the spring and summer when there are ample job opportunities. EPA can also encourage Programs in northern states to expand their training to include certifications that are in high demand at all times of year (e.g. truck drivers who are certified to transport hazardous materials).

Another strategy EPA can implement to enhance employment sustainability is first-source hiring. While many grantees make unofficial agreements with local employers, EPA could strengthen this collaboration by stipulating in its Assessment, Revolving Loan, and Cleanup grants that recipients must hire a certain percentage of job-training graduates if/when The Program exists in the same region.

Finally, I recommend that Program facilitators relate the technical training to local issues whenever possible. Contextualizing the training in this way has the potential to increase participants' investment in the field, and result in a more dedicated workforce.

2. Enhance the Quality of the Worker Training

There are numerous ways that EPA and Program facilitators can improve the quality of the worker training, and make the training more beneficial to participants. First, facilitators should make efforts to emphasize the job safety component of the course in the recruitment process. People who are currently working in dangerous environmental fields will reap immediate benefit from The Program. Making Program candidates aware of this benefit will help to foster interest in the course; in addition, it will create a group of participants who will benefit most fully from this safety training.

For the people who were not previously working hazardous jobs, there is a potential tradeoff element of The Program; and Program facilitators should concede this to participants, making sure that as participants enter The Program and graduates enter the field, they are making informed decisions to do so.

Program facilitators should prevent discrepancies between current participants' expectations and graduates' understandings of job availability/location and expected wages. Beginning with recruitment, participants should be given a realistic idea of where training will lead them. This could include showing a slide show of environmental cleanup sites, as well as providing statistics related to expected wages and job location and type. Risks associated with cleanup and the CWD should also be acknowledged during recruitment.

Facilitators should provide comprehensive environmental education when possible, relating brownfields training to local environmental issues. As expressed by many interviewees, interest in The Program stems, in part, from concern about the local environment. Rather than providing solely technical skills, facilitators should expand training to include information about local brownfields history. This can make the training more interesting and meaningful to participants.

Finally, I recommend that EPA create a feedback loop. Currently, grantees are not required to administer Program evaluations to participants at the end of the course. As shown by my interviews, participants' own articulations of their experiences are a valuable source of information, and can help EPA and Program facilitators to better meet the needs of participants, thereby making The Program more effective. The information gathered in interviews or evaluations will provide a comprehensive picture of The

Program's benefits, and allow EPA to judge The Program's successes that go beyond retention and employment rates, and salary averages. Furthermore, it is possible that mid-Program interviews could help participants to reaffirm their commitment to the class.

3. Strengthen Benefits to the Community

In order to enhance The Program's benefits to the surrounding communities, I recommend that training instructors ground the education in issues that are impacting the participants' own neighborhoods. One strategy instructors can use is giving local examples to illustrate points. In addition, visits to local brownfields sites should be a part of the training, thereby giving participants a more accurate sense of their future work while stimulating concern among participants for local environmental issues concerning brownfields.

Program facilitators and instructors can also encourage participants to talk about relevant issues with other community members. While some participants are doing this on their own accord, facilitators can promote further outreach by initiating an in-class discussion or role-play focused on sharing environmental risk information with family members, friends, neighbors, and coworkers. Providing educational material that participants can distribute, such as pamphlets with lead poisoning symptoms and preventative measures, can also help to instigate outreach.

4. Address Environmental Justice Issues in Target Communities

I recommend that EPA initiate a dialogue with partners and community members concerning the EJ issue inherent in targeting at-risk populations to do hazardous work.

This dialogue could include both benefits and burdens associated with this type of work, and address the perceptions of Program participants, as well as the concerns expressed by The EJ and Community Caucus. Such a dialogue could also encourage insight from residents of brownfields-impacted communities whose perceptions are not currently being publicly recognized.

I also recommend that EPA describe The Program's positive EJ impacts more explicitly in its published material and grant applications, including benefits such as safety practices for untrained workers in the field, knowledge pertaining to local environmental issues, strengthening the knowledge base of brownfields-impacted communities, and increasing the economic opportunities for brownfields-impacted communities. Identifying these potential benefits will help guide grantees in their Programs' achievement of such benefits.

II. Areas for Future Study

There is value to be gained in future research testing whether the conclusions drawn from the Providence and Bridgeport participants' perceptions hold true for other Programs. As demonstrated by my interview results, participants' experiences vary across Programs; findings from two programs, therefore, do not necessarily apply to others. Determining the scope of these findings will help EPA and their grantees make national and local Program improvements.

Updating the 1995 public hearings on urban revitalization and brownfields could also help EPA shape the future of The Program. These hearings should include information on participants' perceptions of the benefits and burdens associated with The

Program, and ask questions such as: Should training include information on the EJ implications of The Program? How do communities perceive The Program in relation to the CWD debate? How can The Program be more conscious of EJ issues? Just as my interviews with Program participants yielded unique research insights, I believe that asking complex EJ questions to the larger public would produce valuable information that could help EPA enhance the benefits of its Brownfields initiative.

Appendix

Interview Questions:

Part I: Recruitment

1) Why did you choose to participate in the course?
2) What job did you have before you took the course?
3) Were you told about health risks associated with this work before you decided to participate in program?
4) Before you started the training, how did you think brownfields impacted your community?

Part II: Program Participation and Training

5) How did you benefit from participating in *The Program*?
6) What did you gain from *The Program in addition to* technical skills?
7) Did you learn about health risks?
8) Were you concerned about health risks before you started *The Program*? Are you concerned about them now?

Part III: Post-Program Work

9) Did you begin a job in the environmental cleanup field after you graduated?
10) Have your jobs in the field been located in your community?
11) What are the health risks at your current job?
12) Do you ever feel in danger?
13) Is this the kind of work you imagined yourself doing when you chose to participate in *The Program*? Why/why not?
14) Do you use the skills you learned in *The Program* in your current job?
15) Are there other ways that *The Program* prepared you for the work you're doing now or see yourself doing in the future?
16) Are you still in contact with the organization where you received training?
    a. What is the nature of that contact?
    b. Was/is it helpful? How?
    c. How long do you think you will continue that contact?
17) Do you get paid more now than you did before you went through the training?

18) Were you exposed to risks in previous jobs?
    a. If so, did you know how to protect yourself from these risks?
    b. Are you exposed to similar risks now?
19) If you hadn't taken this course, what job do you think you'd be working now?
20) What are your long-term professional goals? What job do you want to have 10 or 20 years down the road?

Part IV: The Community

21) Is the work you're doing now benefiting your community?
    a. How do you think your community benefited from having its residents participate in *The Program*?
22) After taking this course, did you have a more thorough sense of how brownfields impacted your community?
23) Are you more concerned about your community's environment now than you were before?
24) Do you think you have a knowledge about brownfields dangers and risks that is important for other people in your community to know about?
25) After learning about environmental hazards in your community, what would you tell other residents? Kids? Families?
26) Do you think an appropriate amount of attention is being paid to the brownfields in your community? What, if anything, do you think needs to be done to improve the brownfields situation in your community?

Part V: Other

27) Are you glad you took this course?
28) Anything else?

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