

Title of Presentation: Brownfields Job Training

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Abstract: The EPA's Brownfields Economic Redevelopment Initiatives are designed to empower states, communities, and other stakeholders in economic redevelopment to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse Brownfields. The EPA is funding job training pilot programs to provide training for residents of communities affected by Brownfields to facilitate cleanup of Brownfields sites and prepare trainees for future employment in the environmental field. These pilot programs are intended to provide the EPA, states, tribes, municipalities, and communities with useful information and strategies as they continue to seek new methods to promote a unified approach to site assessment, environmental cleanup, and redevelopment and opportunity to qualify residents for jobs developed as a result of Brownfields efforts.

The goals of the Pilots are to facilitate cleanup of Brownfields sites contaminated with hazardous substances and prepare trainees from socio-economically disadvantaged communities for employment in the environmental field, including training in alternative or innovative treatment technologies. EPA has selected the New Jersey Youth Corps for Brownfields Job Training and Development Demonstration Pilots. The New Jersey Youth Corps has partnered with the Brownfields Assessment Demonstration Pilot programs of the cities of Newark and Camden, Middlesex County and the Town of Phillipsburg.

The New Jersey Youth Corps is a program of the State of New Jersey's Department of Human Services, Office of Education and provides youth education, job training and career development programs throughout the state. The Pilot training program consists of science and math concepts, the 40-hour OSHA health and safety training, preliminary assessment and remediation investigation courses, ASTM auditing, site characterization, measurements and instrumentation, risk communication, and remedial selection. The 150-hour training program includes training in the use of innovative assessment and cleanup technologies.

New Jersey Youth Corps training efforts are supported by organizations such as New Jersey Institute of Technology (NJIT), International Youth Organization of Newark, and The Work Group of Camden, New Brunswick Council for Youth, Middlesex County Community College, New Jersey Department of Labor One Stop Career Center in Phillipsburg, and the New Jersey Department of Human Services. The New Jersey Department of Environmental Protection has committed to assisting the training program. In addition, local unions have offered their assistance.

The results of the programs including the lessons learned, the effectiveness of the curriculum, and the placement of the participants are presented below.

Introduction

Brownfields are defined as abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. The EPA's Brownfields Economic Redevelopment Initiatives are designed to empower states, communities, and other stakeholders in economic redevelopment to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse Brownfields. The EPA is funding job training pilot programs to provide training for residents of communities affected by Brownfields to facilitate cleanup of Brownfields sites and prepare trainees for future employment in the environmental field. These pilot programs are intended to provide the EPA, states, tribes, municipalities, and communities with useful information and strategies as they continue to seek new methods to promote a unified approach to site assessment, environmental cleanup, and redevelopment and opportunity to qualify residents for jobs developed as a result of Brownfields efforts. A map showing the Region 2 Brownfields training grants issued to date is shown below.

Brownfields Job Training & Development Demonstration Pilots Region 2 - Map



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The New Jersey Youth Corps is a program of the State of New Jersey's Department of Human Services, Office of Education and provides youth education, job training and career development programs throughout the state. New Jersey Youth Corps was established in 1984 and has successfully worked with over 14,000 young adults who want a chance at a brighter future. New Jersey Youth Corps is a year-round, voluntary program designed for young adults, ages 16 to 25, who have left high school before earning a diploma. Youth Corps breaks the cycle of limited opportunity by providing youth with a second chance to earn a diploma while developing employment skills through meaningful community service.

New Jersey Youth Corps offers the following services:

1. Education Development

A major goal of New Jersey Youth Corps is to help young adults obtain a GED (General Education Development) diploma, or an Adult High School Diploma. One-half of the program's time is dedicated to improving and developing the academic skills of Corps members.

Youth Corps incorporates small group, total group, and individual assistance in its classes. Instructors and counselors design a plan tailored to each individual's needs. The plan combines academics with career-related goals, and instruction is incorporated into community service through service learning activities.

2. Community Service Projects

Service Projects provide controlled, supervised work situations where Corps members can develop maturity skills that are essential to being a good employee.

Members work in a team, or "crew," led by experienced Crew Supervisors. The Team works on projects that benefit the community, such as landscaping or beautification, or help in hospitals, food banks, and senior centers. These projects help the community, while providing Corps members with valuable socialization and employment skills.

Some of the landmark projects completed by Corps members include: constructing and staffing the state's first children's museum; transforming an old train station into a tourist information center; constructing a recycling center; rebuilding homes after hurricanes; and serving as emergency medical technicians on urban rescue squads.

3. Personal and Career Counseling

Constant supportive counseling is provided by Youth Corps. This includes personal counseling and career counseling designed to help remove barriers to academic and employment success.

Corps members participate in Employability and Life Skills instruction, as well as individual and group counseling to build self-esteem, clarify values, and develop leadership skills.

4. Continuing Support Services

Corps members who successfully complete the program receive college referral services, job placement assistance, and a personal career portfolio.

5. Living Allowance

While enrolled in New Jersey Youth Corps, young adults receive a stipend.

The locations selected for training programs under the first grant received by the Youth Corps included the cities of Camden and Newark. Both Cities are primarily minority and State Urban Enterprise Zones. Camden is a Federal Empowerment Zone and Newark is a Federal Enterprise Community. Camden is one of the three poorest cities in the country. It suffers from a 16.3% unemployment rate, 40% poverty rate, and a more than 70% high school dropout rate. Newark's poverty rate is 26% and its per capita income is one of the lowest of the 50 largest cities in the country. Fifty percent of Newark's students drop out of school by the ninth grade. A decline in industrial activity in both Cities has resulted in numerous abandoned or underused Brownfields. Efforts by the State of New Jersey and the Cities of Camden and Newark to address high unemployment and low education levels and to assess and clean up Brownfields created a strong need for environmental training.

After the successful completion of the training under the first grant, the EPA awarded the Youth Corps a second grant. The locations selected for training were the Town of Phillipsburg (population 16,000) and the Raritan River Strategic Planning Area (population 92,000) in the eastern portion of Middlesex County. The Town of Phillipsburg is located on the Delaware River in northwestern New Jersey. The decline of manufacturing, including steel, has directly contributed to urban decline. The town's unemployment continues to exceed the state-wide average. In Phillipsburg, eight contaminated sites have been identified within the 3.2 square mile extent of the town. Phillipsburg has been designated an Urban Enterprise Zone by the state.

Middlesex County is located in central New Jersey and is comprised of 25 municipalities. The Raritan River Strategic Planning Area historically was the center of industry and commerce in Middlesex County. The former heavily industrialized region has suffered a significant decline in activity for the past 30 years, leaving many industrial facilities abandoned and contaminated. Almost six percent of Middlesex County residents, primarily African-Americans or Hispanics, live at or below the poverty level.

The Pilots were designed to provide career training for livable wage jobs for young, unskilled residents in the assessments and cleanups being conducted. The Pilot training program curriculum provided under the EPA grants consisted of science and math concepts, the 40-hour OSHA health and safety training, preliminary assessment and remediation investigation courses, ASTM auditing, site characterization, measurements and instrumentation, risk communication, and remedial selection. The 150-hour training program includes training in the use of innovative assessment and cleanup technologies. The detailed curriculum break down was as shown below.

6. Science and Math

A review of the basic science and math concepts necessary to serve as a foundation leading to understanding evaluating and implementing alternative and innovative treatment technologies. The review built upon the general education requirements that were a prerequisite for participation in the

program. The knowledge and skills included went beyond a general education in that they included additional knowledge and skills as is necessary to serve as a foundation leading to understanding, evaluating and implementing alternative and innovative treatment technologies as listed below:

- Algebra
- Inorganic chemistry
- Organic chemistry
- Geology
- Hydrogeology
- Toxicology
- Classroom, laboratory and field contact was 16 hours.

7. 40-Hour OSHA Course

This course, as cited in federal regulations, satisfied the training requirements of 29CFR 1910.120, Hazardous Waste Operations and Emergency Response. The 5 day course, which is a review of health and safety requirements for hazardous waste site cleanup workers, was combined with simulated cleanup exercises, using personal protective equipment up to and including Level A.

The course was designed for those involved in all aspects of hazardous waste operations who must comply with the training requirements of 29CFR 1910.120. Topics included:

- Names of personnel responsible for site safety and health
- Safety, health and other hazards
- Personal protective equipment
- Work practices
- Engineering controls
- Medical surveillance
- Decontamination procedures
- Emergency response plan
- Confined space entry program
- Spill containment programs
- Classroom laboratory and field contact was 40 hours

8. Preliminary Assessment / Remedial Investigation

The procedures outlined in the New Jersey Department of Environmental Protection Site Remediation Requirements for Preliminary Assessment and Remedial Investigation and the ASTM Standards on Environmental Site Assessments were presented. The training provided included the procedures for the handling and removal of hazardous substances related to the implementation of alternative or innovative treatment technologies. These are defined as including methods that permanently alter the composition, toxicity, mobility, or volume of hazardous wastes. Trainees were taught basic knowledge and skills necessary to serve as a foundation leading to understanding, evaluating and implementing these technologies. Investigations areas included:

- Preliminary Assessments
- Site Investigation
- Remedial Investigation
- Topics taught included:
- General sampling requirements
- Quality assurance requirements
- Site Reconnaissance
- Interviews with owners/occupants, neighboring facilities, and government officials
- Transaction Screening Analysis Checklist.
- Building interiors
- Soil
- Ground water
- Surface water
- Area specific requirements
- Ecological evaluation
- Historic usage
- Records review
- Federal

- State
- Local
- Reporting
- Classroom, laboratory and field contact was 16 hours

9. Site Characterization

The proper techniques to determine the nature and extent of multimedia contaminants using both alternative and innovative technologies were demonstrated. This included technologies that characterize or assess the extent of contamination, the chemical and physical character of the contaminants, and the stresses imposed by the contaminants on complex ecosystems at sites. Field exercises were used to enforce the technical procedures. The skills taught included:

- Sample Collection
- Soil
- Ground water
- Surface water
- Air
- Containers
- Monitor Wells (Installation, Development, Sampling)
- Alternative Soil/Ground Water Sampling Techniques
- Geophysical Techniques
- Field Logs
- Data Collecting
- Data Analysis
- Standards
- Data Presentation
- Reporting

Classroom laboratory and field contact was 24 hours.

10. Measurements & Instrumentation

Trainees were taught how to utilize various instruments including alternative and innovative technologies applicable to Brownfields sites. These technologies were taught through presentations and hands-on exercises to maximize learning and develop trainee proficiency. This information was presented in classroom and practical exercises including:

- Monitoring Device Selection
- Combustible Gas Indicators
- Oxygen Meters
- Flame Ionization Detectors
- Photo Ionization Detectors
- pH Measurement
- Colorimetric Methods
- Laboratory Protocols
- Test Kits
- Immunoassay Testing
- Field Gas Chromatography
- X-Ray Fluorescence
- Classroom laboratory and field contact was 16 hours

11. Risk Communication

The student was taught to evaluate and understand the reports of risks presented by various areas of concern. Common computer models were discussed for defining air and groundwater dispersion. Techniques for evaluating and utilizing both alternative or innovative treatment technologies were included.

Classroom, laboratory and field contact was 4 hours

12. Remedial Selection Overview

The principles representing the technical basis of the available remedial actions were presented. The student learned how to evaluate both alternative and innovative treatment technologies and select the appropriate protocol for the set of parameters determined to exist at a site. This included

technologies that characterize or assess the extent of contamination, the chemical and physical character of the contaminants, and the stresses imposed by the contaminants on complex ecosystems at sites. The theory and applications of the following technologies were discussed;

- Bioremediation
- Soil Vapor Extraction
- Soil Washing
- Solidification
- Vitrification
- Excavation
- Oxidation;
- Engineering Controls
- Administrative Controls
- Phytoremediation
- Natural Alternatives

Classroom laboratory and field contact was 16 hours.

13. Report Writing

The class covered how to organize and present collected data. Elements of a report along with report organization skills were addressed and include the following:

- Outlines
- Reporting
- Data Presentation
- Graphic Presentation
- Photo Documentation
- Importance of Grammar/Spelling
- Classroom, laboratory and field contact was 8 hours.

14. Field Trips

The classes took field trips to see first hand the implementation of both alternative or innovative treatment technologies.

- Local Brownfield sites
- NJIT Campus and Hazardous Materials Research Center
- EPA Edison Facility
- National Oceanic & Atmospheric Administration – Sandy Hook facility
- Classroom, laboratory and field contact was 8 hours.

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The majority of the youth in the first training were minority males and females from two of New Jersey's poorest urban areas (Camden and Newark). A total of 8 from Camden and 15 from Newark completed the program. The 2nd training consisted of white and Hispanic youth from a rural area and African American youth from an urban/suburban area. (Phillipsburg and New Brunswick) A total of 20 from Phillipsburg and 6 from New Brunswick completed the program. Some youth were previously employed in minimum wage positions and received a stipend of \$5.05 to \$5.15 per hour for community service performed within the Youth Corps program.

The job market opportunities were considered to include the following job titles:

- HAZMAT TECHNICIAN
- CLEANUP TECHNICIAN
- LABORATORY TECHNICIAN

- ENVIRONMENTAL FIELD SAMPLING TECHNICIAN
- EMERGENCY RESPONSE TECHNICIAN
- OIL SPILL CLEANUP TECHNICIAN
- BROWNFIELD CLEANUP TECHNICIAN

Local employers, the EPA and the NJDEP were contacted for placement of the participants. The results of the program were rewarding to all involved. Program results are summarized below:

Camden

- 4 are employed, one within the environmental field
- 2 are at the local Community College, w/ PT jobs
- 1 is in the Army Reserves
- 1 has moved from the area and not contact has been established
- **8 completed the training program**

Newark

- 3 entered the AmeriCorps program
- 2 entered the local Community College and plan to apply to NJIT
- 2 are working in the environmental field
- 1 entered the military
- 1 is enrolled in Cosmetology School
- 6 are working outside the environmental field
- **15 completed the program**

Phillipsburg

- 13 are employed, 12 within the environmental field
- 7 are pursuing employment and/or continuing education
- **20 completed the program**

Middlesex

- 1 is employed in the environmental field
- 4 will be completing their OSHA training
- 1 is seeking employment
- **6 completed the training**

It should be noted that the Middlesex and Phillipsburg programs were completed at the end of April and the job placement activities were initiated in May. The data above was as of June 15, 2001. It is anticipated that additional placements will be achieved. As a part of the grant program, the Youth Corps is required to track and present the status of the trainees to the EPA.

Summary

In summary, the program was considered highly successful and currently the Youth Corps is exploring other funding sources to continue the training in upcoming year.