Community Environmental Health Assessment Workbook

A Guide to Evaluating Your Community's Health and Finding Ways to Improve It

AN ENVIRONMENTAL LAW INSTITUTE WORKBOOK

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Part One

Introduction and Overview

WHAT IS THE WORKBOOK?

This Workbook will help community leaders, local organizers, and citizens groups assess environmental health problems in their neighborhoods and assist them in tackling these problems. It outlines an approach to identifying problems, gathering information, and establishing the community's priorities for improving the environmental health of its residents. Examples for Washington, D.C. serve as illustrations and possible examples. Residents of other cities and localities can find equivalent resources and data within their own communities.

WHAT IS ENVIRONMENTAL HEALTH?

Environmental health is part of public health. It looks at the environment in terms of the pollutants, human behavior, and other factors that affect human health. In public health terms, the environment includes the food we eat, the air we breathe (indoor and outdoor), the housing we live in, the water we use for cooking, drinking and bathing, the recreational lands that we use, as well as the parks and wilderness areas we have preserved for future generations. We like to think of the environment broadly, because people and their surroundings interact and intersect in so many different ways.

FOCUS ON THE URBAN ENVIRONMENT

Recent news reports and various urban management studies have shown that urban communities in the United States are victims of serious environmental degradation. Despite twenty-five years of national effort to protect the environment, many urban areas today are faced with deteriorating infrastructure, abandoned commercial and industrial properties ("brownfields"), congested living conditions, contaminated water, polluted air, and a declining industrial base. Urban areas house large immigrant and minority populations who are often unable to participate in decisionmaking about their own living conditions. Health statistics show that rates of cancer, respiratory illness, and heart disease are higher in urban areas than nationwide (see boxes on pages 2-3). Overcrowding, poverty, stress and crime also contribute to the degradation of the environmental health of city residents.

LINKS BETWEEN MAJOR URBAN DISEASES AND THE ENVIRONMENT

Urbanization (migration of people into urban areas and the resulting development of urban areas) has public health consequences. In the early part of this century, illnesses and diseases in urban areas were primarily related to inadequate water supply, poor waste dis-posal practices, substandard and crowded housing, and unhealthy food supply. As a result of certain epidemics and health crises, laws and standards were adopted to protect human health. Unfortunately, even today these causes of poor urban health still remain and may be made worse by current issues, such as access to health care, inadequate nutrition and exposure to toxic chemicals.

The diseases and illnesses typically found in urban areas are listed in the table on the following page. Some urban illnesses are linked to environ-mental problems, particularly gastrointestinal, respiratory and infectious diseases, certain cancers, and infant mortality.

This table is not meant to be an exhaustive list. Rather, it is an illustration of the types of diseases for which cities have routinely collected data.

Urban Disease Categories	
Diarrhea and gastrointestinal diseases	shigellosis salmonellosis campylobacteriosis giardiasis E. coli
Respiratory disease	asthma respiratory infections pneumonia tuberculosis chronic respiratory disease influenza
Sexually-transmitted diseases	AIDS syphilis gonorrhea
Infectious diseases	tuberculosis hepatitis influenza
Perinatal deaths	
Cancers	lung colorectal breast prostate bladder leukemia
Cardiovascular diseases	heart disease
Cerebrovascular diseases	stroke
Trauma	accidental injuries occupational injuries personal violence traffic injuries
Mental and behavioral diseases	
Addictions	drug abuse alcoholism

Urban residents are confronted with special environmental challenges. Not only are they exposed to a host of hazards founds in cities, but ecosystems within and near cities are also threatened. For cities to remain viable and livable, city residents, planners and municipal governments need to recognize the close relationship between the urban environment and community health.

This Workbook draws many examples from the District of Columbia, although it is applicable to most urban and other settings. Cities are dynamic and evolving places, continuously changing and being redefined. They bring together in close proximity business, government, and residents. For these and other reasons, it is a challenging task to evaluate and improve their environment.

WHAT DO THE STATISTICS SAY ABOUT ENVIRONMENTAL HEALTH?

Health statistics are basic indicators for the community at a single moment in time. They provide a snapshot of health problems or progress. Health data may reveal an epidemic or an unusually high number of cases of a specific disease, sending up a red flag. For example, a review of health statistics obtained from the D.C. Commission of Public Health and other sources reveal the following:

- Infant mortality in the District is the highest in the country at 13.1/1,000 live births, twice that of national rate. Within D.C., infant mortality is reportedly the highest in wards 7 and 8.
- Lead poisoning is a significant issue in D.C. with about 81,500 housing units containing lead-based paints. Despite D.C.'s effort, less than half children under age six are screened. Of the children that are screened, 7% had blood lead levels greater than 10 mg/dl. Levels as low as 10 mg/dl are associated with potentially adverse health effects such as learning disabilities.
- In D.C., more than 7,300 children and 20,000 adults have asthma and another 36,000 D.C. residents suffer from other chronic or persistent respiratory diseases.
- D.C. has the highest cancer mortality rate in the nation.
- The average life expectancy for D.C. residents is 75 years. The life expectancy of District black residents is almost eight years shorter than that of white residents.
- There is a shortage of health care providers in the District. In some wards there is only one physician for every 8,000 children. In Ward 7, for example, there are only seven private physician and three dentist offices.

Similar statistics can be found for cities and other localities across the United States by checking with local and state health departments, as well as the National Center for Disease Control and Prevention, National Center for Health Statistics.

Sources: D.C. Department of Health 1996, 2000.

CITIZEN INVOLVEMENT IN ENVIRONMENTAL HEALTH

This Workbook is designed to assist citizen organizations change their communities. It focuses almost exclusively on the role that citizens can play in evaluating and improving their environment. It will teach community organizers, activists and leaders of community groups how to use and compile available information — scientific, technical, and social — to prioritize their community's health problems and develop strategies for solutions. It provides a method for bringing people together to talk about urban environmental health and for prioritizing and tackling a community's environmental problems. This work will rarely be easy. But by following this Workbook, the community will be "in the driver's seat." Citizens will be making decisions about what problems to pursue, when to pursue them, and how they might be solved.

Community organizations are in touch with local needs, conditions, and resources and therefore, can devise innovative and effective solutions to many neighborhood environmental health problems. Citizens can improve the quality and health of their community's environment by changing their own behavior, advocating for change in government policies and pollution-generating practices of industry and other sources. Communities can also advocate for improvements in environmental quality of neighborhoods (e.g., identifying abandoned properties for clean-up and redevelopment) and for improvements in environmental services (drinking water, solid waste pick-up) for their community. One of the keys to improving community environmental health is citizen involvement and participation in decision making about the future of their community.

CONTENTS OF THIS WORKBOOK

The Workbook is divided into four parts. It is written mainly for the citizen organizer, community leader, or other person who will serve as the project manager and take the lead in organizing the assessment. Part One (this Part) is a brief introduction and discussion of this Workbook. Part Two discusses the reasons why your community should undertake an environmental health assessment, and outlines the assessment process. Part Three explains the community environmental health assessment process step-by-step, and shows citizens in detail how to conduct an assessment. Part Four suggests possible next steps after a community assessment is completed. Assessment worksheets are presented throughout the Workbook. We suggest that you use these worksheets to organize your information, meetings and thoughts and to complete the assessment. In addition, a number of resources for environmental and health information, potential funding sources, and local District of Columbia government agencies are listed in the appendices at the end of the Workbook. Similar resources can be found in most major metropolitan areas, as well as many smaller cities and towns.

The process of conducting a community environmental health assessment, identifying priorities, and developing an action plan for your community can be both rewarding and frustrating. Citizens will need to make a time commitment, cooperate with others as they work on the assessment, and imagine the future.

Good luck in your efforts to identify and solve the environmental problems affecting your neighborhood!

Part Two

What Is a Community Environmental Health Assessment and Why Conduct One?

WHY SHOULD COMMUNITY GROUPS TAKE THE LEAD?

Citizen participation in analyzing their community's environmental health has too often been reactive and passive. By passive, we mean that community groups have generally not taken a leadership role in assessing their problems. More traditionally, they have relied on outside scientists or researchers to identify their environmental and health issues. By reactive, we mean that community members have responded to, but not always initiated, studies about their health. Their reactive/passive approach has yielded some important information, but it has not taken advantage of the unique knowledge of community members, nor engaged them as partners in the process.

That is why this Workbook takes a different approach. It puts community organizers and activists "in the driver's seat." Neighbors will be working directly with neighbors to take the lead in characterizing their own environment.

One of the things this Workbook is meant to do is give you a way to think about and organize information. In research terminology, this is called a "methodology." The methodology of this Workbook is based on a few simple principles:

- Community organizations and local citizens are in the best position to know about what most directly affects their environment and health;
- Community organizations and local citizens have the skills to work together, identify their own most pressing problems, and find solutions to them;
- Community organizations and local citizens can identify, and work with, resources in their own communities to help solve their own problems; and
- A community-driven process designed by local citizens will most likely be acceptable to a large majority of the area's residents and neighbors.

To put this methodology into practice, we have given you worksheets to fill out. These worksheets are very important, and we urge your community to use them. They will help you to organize your thoughts, as well as create a record of your thoughts and goals. When you finally prepare your community list of priority problems, you will be able to look back to see how you got there.

This methodology for comparing community environmental and health hazards is far from perfect, and it is only one method of establishing environmental priorities. Another method is the traditional "quantitative risk assessment," which is usually conducted by federal or state agencies, which uses scientific data to identify adverse impacts on human health or ecosystems based upon pathways of chemical exposures at specific concentration levels. Human health risk assessments follow a four-part formula to characterize risks in terms of excess cancer risk or excess disease produced.

A community environmental health assessment (like this Workbook will help you to prepare) is less dependent upon data than a traditional risk assessment. This Workbook

will require more discussion and deliberation among the various affected members of your community to reach consensus. Of course, limitations apply in making any risk-related or priority-setting decision. As with quantitative risk assessments, your community environmental health assessment prepared with this Workbook may have no choice but to use imperfect or incomplete information about the risks of multiple pollutant exposures or pollution sources. Therefore, it is important for you to acknowledge openly your assumptions, data gaps, and data limitations.

WHAT DO I NEED TO DO TO GET STARTED?

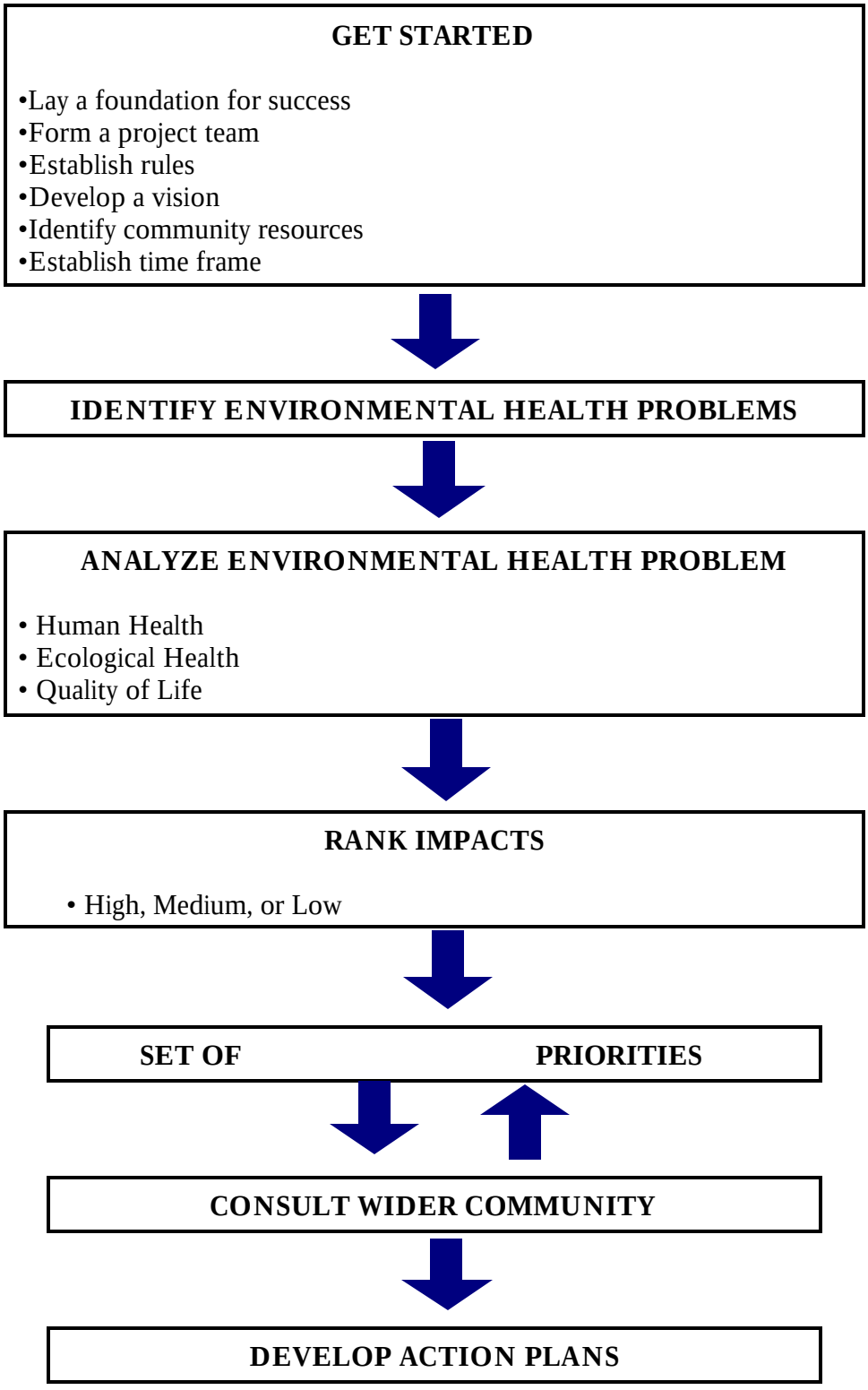
You do not need special training, scientific or medical knowledge to prepare a community environmental health assessment. What you do need is someone to organize and coordinate that effort and keep things on track. That person, whom we call the "project manager" in this Workbook, should be someone who lives and works with urban residents, knows the community, understands their problems, hopes, aspirations and needs, and has a commitment to improve their community's environmental health. If you are a community leader, citizen activist, member of the clergy or leader in a civic association, you are well qualified to be the project manager for your community's environmental health assessment. This Workbook is a guide for you to serve as a project manager for this effort.

As project manager, you will need to recruit other community members to work with you. We refer to this group as the "project team." The most important skills for project team members are enthusiasm, a desire to work with fellow community members, an open mind, and the willingness to be a "shoe leather sleuth." Because your project team will need information, team members should not be afraid to ask questions and seek data from local and federal agencies, friends, neighbors and others. You will see how all this fits together later in the Workbook.

LAUNCHING THE COMMUNITY ASSESSMENT AND DEVELOPING PARTNERSHIPS

In a community environmental health assessment, a project manager first assembles a project team. Then, a broad list of environmental problems identified by the project team. This list is then divided into problems that have similar characteristics. Information is collected to evaluate each problem, including an evaluation of human health, ecological, and quality of life impacts. The problems need to be analyzed consistently and openly, and all values and assumptions should be carefully documented. A basic flow chart of the community assessment process is shown on the following page.

Community Assessment Flowchart



Once the analysis of the community's problems is complete, the problems must be ranked. The priorities established by this ranking are then integrated with other factors to develop an action plan to address the highest risk problems first. These other factors include the ability of your local government actually to solve a particular problem, local, state or federal laws, community preferences, and the relative ease with which a problem can be solved.

Preparing a community environmental health assessment is time consuming, but in the end you will have a tangible plan to help make your community a better place. Along the way, you may encounter some obstacles, but in most cases these can be resolved. To make the process smoother, it is often helpful--but not always necessary--to obtain some financial support. Later in the Workbook we will give you some ideas about potential sources of funding.

In addition to time and money issues, community research projects could be viewed skeptically, especially by people who believe that valid research comes only out of well-established, nationally known organizations and institutions, such as universities or national non-governmental environmental organizations, where projects are done by "scientists." Committed public interest scientists and dedicated community researchers are working hard to break down this attitude, but it still exists.

In order to help establish credibility for a community-based assessment, we recommend carefully following the methodology we have outlined in this Workbook. If you can, it is often helpful to reach out and partner with well-established and prominent environmental groups, health organizations, universities, or other local institutions who can help promote your project. These organizations often have resources that you can use to put your assessment together. Washington, D.C. and most other cities and communities are home to national and international environmental organizations and universities that can be a resource to you and your community. Their role would be to serve as advisors and help you with your work. The Appendices of this workbook list some prominent environmental and health resource groups in Washington, D.C. These lists may help you identify similar resources in your community.

We also recommend obtaining the support of the city government and your city council member, as appropriate. In Washington, D.C. you may want to approach the Mayor's Office, City Council, Department of Housing and Community Development, the Department of Health and the Department of Consumer and Regulatory Affairs. Equivalents to these organizations can be found in your community. Local government support can be very helpful because it may ultimately be the responsibility of government to implement many of the changes and improvements that your community assessment recommends. See Appendices for a list of D.C. government agencies and contacts.

Part Three

Conducting Your Community Environmental Health Assessment

Part Three explains in detail the process for you to follow in preparing a community health assessment.

SECTION 1: GETTING STARTED

In this section, you will launch your community environmental health assessment project by carrying out the following:

Laying a Foundation for Success
Forming a Project Team
Establishing Rules
Visioning
Identifying Community Resources
Establishing a Time Frame
Allocating resources

LAYING A FOUNDATION FOR SUCCESS

As project manager, one of your most important roles is to keep things moving forward. This may not be as easy as it sounds. You must bring together a group of citizens from your community with different skills and interests who are willing to work together, and work with you, to help solve environmental health problems. Can you keep your community group on track?

There is no simple answer to this question. We suggest that you consider the following activities to keep your assessment moving forward. As project manager, it is your job to assign these roles to team members or assign them to yourself. You or someone on your team will need to:

- Organize project team meetings (including taking notes at the meetings and distributing these notes to project team members);
- Arrange for meetings with government agencies, potential partners, and other people or groups that are information sources;
- Coordinate data collection and other necessary research;
- Write portions of the problem descriptions, environmental action plans, and other key project documents;
- Speak at public meetings; and
- Undertake other logistical functions as needed.

Of course, the people to whom you assign these roles and responsibilities may vary depending upon the strengths and abilities of project team members and what role you wish to play yourself. We strongly recommend that you keep most of these organizing tasks for yourself; think of your project team members as spokes on a wheel and consider yourself as the wheel's center.

FORMING A PROJECT TEAM

As project manager, you will need help to carry out an environmental health assessment. To get this help, you will need to form a project team. Who are the "right people" to invite to get involved in a community project? Above all, the right people include those who are concerned about the environment, concerned about the well-being and quality of life in your community, and involved enough to invest

some of their time and energy. Individuals you may want to invite include members of local or national environmental non-governmental organizations, professors from local universities, local business leaders, representatives from local institutions such as schools, churches and community development corporations, as well as environmentally concerned and committed individuals who are community residents.

Your project team is central to the success of your environmental health assessment. They will collect and analyze information and data to develop a picture of the environmental problems facing the community. The team will also identify and select community environmental health improvement strategies. The project team should educate the residents of your community about the assessment project and involve them in any local improvement efforts. Some specific responsibilities for the project team include:

- Identifying the range of environmental problems facing the community;
- Reviewing all existing sources of information on environmental problems in the community and determining how to fill critical information gaps;
- Analyzing this information and preparing problem statements describing the health and ecological hazard, as well as the quality of life risks associated with each problem;
- Ranking the environmental problems facing the community;
- Informing the community (and other interested members of the public) about the environmental problems facing your community, and the possible solutions; and
- Analyzing potential implementation strategies to determine their applicability to the community, and preparing a community environmental health action plan.

After you assemble your project team, it is important to get your assessment started as soon as you can. If possible, hold a meeting to discuss the purpose and goals of the assessment, anticipated results and time frame. Be sure to allow plenty of time for questions and answers. After team members have a clear understanding of the project, ask them to think carefully about how much time they can devote to the assessment. Keep in mind that your volunteers will probably have other commitments that may limit the amount of time they can devote to the project. Depending on the number of people who are interested in serving on the project team, you will be better able to evaluate the team's strengths and limitations. This will help you in assigning roles and responsibilities to the team and tailoring the scope of your assessment to be realistic in accomplishing improvements for your community.

ESTABLISHING RULES

There is no single correct way to conduct a community environmental health assessment. Many approaches work and each project will adapt its approach to the community's own political, institutional, cultural, and other needs. However, there are at least five important ground rules that should be established at the beginning of your assessment.

Rule 1: *Collect All Information Even if It Is Imperfect.*

Sometimes you will find that detailed information -- what you might think of as "data" -- is only available for a part of an environmental problem or that no information

exists at all. You may wish to assess the impact of air pollutants on your community and find that only information about ozone levels is available. You might have risk information about only a portion of your community and you would like to know about the whole community. If you find your team in this situation, which is very common, do not be discouraged. In these situations, even limited information may still be useful. For example, if you know that ozone levels in your city are high, it might be possible to make the assumption that levels in your neighborhood are also high. Of course, this will introduce the potential for error, which should be acknowledged, but it still allows you to estimate the magnitude of the problem in your community.

If information does not exist that is useful or desirable for your assessment, your project team should make a note of the missing information. Information about these "data gaps" can be useful for later researchers and decisionmakers. If parts of your assessment are dependent upon information that is incomplete or does not exist, your project team can make reasonable assumptions about these issues. For example, if bacteria in drinking water is a problem but scant information exists about this problem in your neighborhood, your project team can make assumptions based on other water quality data (such as pH or turbidity) or note that this information is lacking.

Rule 2: *Be Complete and Consistent*

Your project team should analyze problems consistently. In order to compare and rank the hazards posed by different environmental problems in your community, team members need to apply a consistent set of definitions and treat problems as objectively as possible.

Your project team should be explicit about definitions, methods, information sources and gaps, assumptions and procedures used in your assessment. It is important to include an explanation of the rationale behind your decisions. In addition to describing the actual decisions that you reach, it is important that the project team and the community residents better understand the strengths and weaknesses of the assessment. This creates a greater degree of trust among members of the public and others who may critique the analysis and the priorities developed from the analysis.

Your project team also must differentiate between the impacts of their environmental problems and their management. The relative ranking of a problem is a key factor in setting environmental priorities. Your community environmental health assessment asks the question, "what are the impacts associated with different problem areas and which impacts are most severe?" Management of these problems will lead to devising solutions to reduce or prevent these impacts. This is considered later in the assessment process during the development of strategies to reduce the impacts. At this point in the assessment you should be concerned with estimating the magnitude and nature of the impacts. Their management will be addressed later.

Rule 3: *Be Careful to Define the Assessment's Scope*

In order to define the scope of the assessment project, your project team must decide which environmental issues will be covered, what geographic areas will be covered, and whether both immediate and

future environmental impacts will be addressed.

a. ***Which problems***? The environmental health problems of greatest interest to your project team and the community should be the first issues you examine. These problems will frame the overall analytic approach of your assessment. For the most part, comparative risk analysis has focused mainly on traditional regulatory environmental problems (e.g., air and water pollution). In the community environmental health assessment, your analysis may be broader and should cover problems such as: water and air pollution; land use issues such as redevelopment of "brownfields"; indoor air issues such as radon, passive smoking, and lead poisoning; pesticide use around schools and other public buildings; and housing quality issues.

b. ***Geographic scope***? Before conducting the assessment, you must define the geographic scope of the project. Is it five city blocks or is it your entire neighborhood? Defining the geographic boundaries of the study area should include assessing the import and export of pollution across your study area's boundaries and the relative contributions of both internal and external sources of pollution and other problems. Some impacts may be imported into your community from other areas. One example might be illegal dumping of waste from neighboring areas.

c. ***Present or future impacts****?* Usually impact and risk assessments look at only existing problems and at current efforts to eliminate or prevent these risks, giving only a "snap-shot" of what is happening at that moment in time. In this Workbook, we hope to help you to establish environmental priorities for prevention efforts. Focusing only on current problems has proved to be unsatisfactory in many cases. In order to get the most out of your community assessment, a sense of both the present and the future should be incorporated into your analysis. It may be difficult to apply your analysis to uncertain conditions in the future. One approach is to build into each evaluation criterion an analysis of the trend of the threat, such as "is the problem likely to get better, worse, or stay the same with time?"

VISIONING

One of the principal tasks of your project team is defining the community's environmental health issues so that local government agencies (from whom you may seek support), local or national environmental organizations (that you may wish to be your project's "champion") and other community members can get a clear picture of the purpose of the assessment project and how the project will be implemented. We call this "vision thinking." It means that your project team gets together and thinks about the future of the community and community environmental health, defining the project goals and objectives.

It is critical that members of your project team come to a consensus about your final assessment goals. Your assessment can be broad or narrow in focus. Since you will be conducting a community assessment in the urban environment, a broad focus may be preferable. A broad focus will capture a more complete range of environmental, health, and social factors that influence the urban environment and affect your community.

Vision thinking can be achieved through a community "visioning exercise." To begin, allow each member of your project team to express his or her ideas about the community's environmental health problems

and its future and openly discuss issues that relate to your environment, as well as the city's and your community's livelihood.

Next, you can work together to create a community vision that has a picture of what you would like to create or have happen in both the near future and the next generation. Your vision should address environmental issues, as well as issues you consider central to your community's future, such as economic development, education, governmental services, and improved quality of life. By creating a community vision, you will be developing a framework to help your project team make choices about your goals and solutions.

To help develop your community vision, ask yourself and members of your project team what they would like your community to look like in five, ten or fifty years with respect to the following:

- The natural environment: Are there any trends, such as loss of natural resources or increasing pollution, that trouble you? How can they be reversed? For example, how can the community preserve green space and recreational lands?
- Land use: Is there currently a well-balanced mix of land used for industrial, commercial, residential and open space purposes in your community? Can some areas be used differently? Are there vacant properties or brownfields that could be redeveloped? Any different land uses needed?
- Infrastructure and services: Are there problems with your city infrastructure that need correction? What local services are important? What does your city do well? What does it do poorly? What does it not do, but should be doing? What role should federal

government agencies play? What activities threaten your community's livability?

- Economic growth: Do you want to attract new businesses to your community? What kinds? What resources are needed to attract new businesses? What about attracting new services, such as supermarkets, banks, schools, doctors, dentists and medical clinics? How can you discourage activities that threaten environmental quality?
- Community health: How should your community address health problems such as infant mortality, childhood lead poisoning, lung cancer, nutrition, poor indoor air quality, or access to health care? How does public health in your community compare with other areas of the city and with national norms?
- Quality of life: What is your vision for your community in such areas as economic well-being of residents, safety, recreational activities, aesthetics, and sense of community?

For each of these items, it will be helpful to list the ideas suggested by your project team. At the end of the visioning process you will likely have a very long wish list for the future. Combining similar items and discussing differences will narrow the list to a handful of items that are most important to everyone on your project team. When you have reached some consensus, ask your team members to discuss how the different parts of your team's vision fit together, and how you can improve environmental health so that you can achieve your community's goals.

SECTION 2: IDENTIFYING COMMUNITY RESOURCES

After you develop your community vision, identifying community resources is the next important step. You can identify community resources by "mapping" your community's assets. Each community boasts a unique combination of assets upon which to build its future. And these same assets can be mobilized to address environmental problems facing the community. Assets of a community include individuals, associations, institutions, natural resources and financial sources. Your project team should look carefully at your community and take an inventory of the assets that may be used to conduct the assessment and carry out solutions.

Asset "mapping" is similar to vision thinking. Keeping in mind the results of your vision thinking, each project team member should describe the valuable resources in the community that he or she believes will help make your community a better place to live. Is it a business, such as a local, family-owned restaurant, that has provided continuity and a meeting place for friends and relatives? Is it a religious institution, such as a church with an active outreach program? Are financial institutions valuable assets? In listing these assets, it is helpful to remind project team members that assets can be tangible and intangible. A family physician who runs a general practice clinic may be just as important as a local convenience store or supermarket. You should consider the five categories listed here when mapping your assets.

1. Individuals

Many people have valuable skills that

can be tapped to help solve environmental problems. Think about what expertise exists within the community. For example, do fellow citizens have skills in environmental science, management, public speaking, computer processing and report writing? Additional, but often neglected, assets are found in groups of people who are out of the mainstream of the active life of the community. The young people in the community have time, new ideas and creativity, real community connections, dreams, enthusiasm, energy, and credibility to contribute. Senior citizens have culture, tradition and history, a life of experiences and skills, time and connections to peer groups that they can contribute. Disabled individuals have learned to overcome obstacles and take creative approaches to everyday problems. Many public assistance recipients have work skills and experience, networking and personal relationships, dreams and creativity, and energy and enthusiasm. Local artists have culture, skills, vision and creativity, productivity, self-expression and self-esteem to contribute. Also, individuals in your community may have valuable insights about, or very useful connections to, government agencies, the city council and environmental and health information sources and funding.

2. Civic, Neighborhood and Other Associations

One of the most important community organizations for empowering individuals and mobilizing their capacities is the civic or neighborhood association. An association is any group of citizens working together; it can be formal or informal. You may want to approach your community's neighborhood associations to solicit volunteers or present results of your assessment as part of your public education efforts. Your project team should also consider contacting business organizations, local media, garden clubs, school groups, fraternities and sororities, the Young Mens and Womens Christian Associations (YMCAs and YWCAs), Police, Girls and Boys Clubs, and church groups.

3. Local Institutions

Neighborhood parks, libraries, schools, churches, police, hospitals and clinics, universities, community colleges, and museums are important local institutions. These institutions represent significant concentrations of resources such as facilities to hold meetings, as well as sources of materials and equipment, such as computers, books, photocopy machines, teachers and personnel.

4. Financial Resources

What funding is available within or outside your community to help you address environmental problems? What in-kind contributions can be solicited from businesses, institutions, or individuals?

ESTABLISHING A TIME FRAME

Depending upon its scope, your community assessment can be very time-consuming. It is a good idea to have a clear definition of your objectives and consistent support from participants. One way to help assure continued support for your project team is to set a realistic timetable for completion. An environmental health assessment can take a few months or a year to complete. Your timetable will depend upon who participates and the number of environmental problems you wish to analyze

and rank.

A timetable does not need to be detailed and should be used as a guideline, but not followed blindly. During your assessment, things can change. You may need to adjust the timetable to accommodate new knowledge, a change in focus, or for some other reason. As project manager, you will need to see that the project team is making progress. A clear timetable can help you. A timetable will also help in planning. If you know approximately when the project will end, you will be better prepared to think about how to distribute the assessment and educate the community about it.

ALLOCATING RESOURCES

You may have some expenses associated with implementing your community environmental assessment. For instance, you probably will need office space or a home office, access to a telephone, a fax machine, a computer and a copying machine. Other costs to consider include postage for mailings and supplies such as paper and envelopes.

Not all project expenses require expenditure of funds; many expenses can be covered by "in-kind" contributions. You should have a good idea of the organizations in your community and their assets after your project team finishes with identifying community resources. For example, a government agency or a community-based organization such as a community development corporation can potentially help you find resources. A local non-governmental organization or environmental organization can also be contacted for in-kind contributions, such as office space and access to office equipment.

For costs that cannot be covered by in-kind contributions, you may need to raise money. You may wish to approach government agencies such as the departments of health, housing and community development, and public works, or the mayor's office for special funding for community initiatives. Grants may be available from the federal government U.S. EPA and private foundations. Information about how to apply for funding from foundations can be obtained from the Foundation Center. Branches of the Foundation Center (79 Fifth Avenue, New York, NY 10003, Tel: (212) 620-4230; Fax: (212) 691-1828) can be found in many U.S. cities, including Washington, D.C. Potential sources of funding in D.C. (Appendix C) can serve as examples of resources in your community.

IDENTIFYING ENVIRONMENTAL HEALTH PROBLEM AREAS

Once you have completed the ground work and gone through the start-up process, you are ready to begin identifying and analyzing environmental health issues. Your first key task is to work with the project team to establish a list of clearly defined environmental problem areas to be analyzed. This task is very important because it affects how your analysis will be conducted and the subsequent ranking results. First, generate as broad a problem list as possible. Second, describe why these problems are of concern in terms of the human health, ecological and quality of life impacts. Third, combine these problems and refine your broad list into a narrower one. You will end up with a problem list for which the issues are thoroughly defined and data sources and gaps are identified. These are the areas we recommend you address:

Develop a Broad List of Problems
Describe Environmental Problems in Terms of Impact Categories
Group Similar Problems Together
Collect Data
Prepare Problem Summaries

SAMPLE QUESTIONNAIRE FOR COLLECTING INFORMATION FROM COMMUNITY MEMBERS ON LOCAL ENVIRONMENTAL HEALTH PROBLEMS AND CONCERNS

• What is the history of environmental pollution problems in our community? Describe.

• Are environmental pollution problems in our community improving or getting worse?

• Do you believe environmental pollution problems in our community have any relationships to health problems in this community? If so, which ones and what health problems?

• Where are the most serious environmental problems located in this community?

• Have customs or habits in our community changed as a result of environmental pollution?

• Have environmental pollution problems had any economic impact on our community or your own well-being?

DEVELOPING A BROAD LIST OF PROBLEMS

You can develop a broad problem list by building on the information you collected during Section I. You might begin by asking each of your team members to think about the environmental problems facing your community and why they cause them concern. At this point, as project manager, you should encourage your project team to be creative and include all their suggestions without criticism. You may wish to survey the larger community on environmental health concerns to help generate a problem areas list (see sample survey questions above). Once you have generated a fairly comprehensive list of problem areas, you can organize it by characteristics and group similar problem areas together. After problems are grouped together, descriptions can be written for each area.

Your project team should think as broadly as possible in developing the initial list of your community's environmental health problems. The tables on the following pages show the potential effects of various urban environmental problems, their sources, and the geographic level of their impacts. If you want to involve others in your work to identify problems, you can solicit ideas from the community through surveys, focus groups, and community meetings. The Listing of Environmental Problems Worksheet at end of the section (pg. 33) will help you document the environmental health problems you have identified.

DESCRIBING ENVIRONMENTAL PROBLEMS IN TERMS OF IMPACT CATEGORIES

We suggest that every community environmental health assessment analyze each environmental problem area using three broad impact categories: human health, ecological and quality of life impacts.

1. *Human Health Problems*

Chemical and biological contaminants in the environment potentially can cause a variety of human health problems. Health risks can generally be divided into those risks that can lead to cancer and those that lead to other illness. This second category of problems is often referred to as non-cancer risks. Non-cancer risks include respiratory ailments, gastro-intestinal disorders, developmental impairments, nervous system disorders, and reproductive effects, among many others. Because many small environmental exposures can take place simultaneously and over long periods of time, it is usually impossible to measure precisely the exposure of community members. Also, because of the limits of science, most experts cannot tell you exactly which, if any, exposure caused a particular disease or condition. Still, it is important to try to find out as much as possible about exposures and diseases in communities, even if they cannot be linked to each other beyond a scientific doubt. Resources for potential health effects/impacts associated with environmental exposure are listed in Appendix B.

2. *Ecological Hazards*

Ecological hazards are threats to ecosystems, the health and diversity of the plants, animals, and natural communities within a specified area. For example, an ecological analysis examines the likelihood of adverse effects (loss of habitat or species death) as a result e.g., of exposure to environmental hazards (road construction,

lead exposure) that impact wildlife or certain plant species. Ecological risks are important because a healthy ecology plays a leading role in keeping natural resources functioning properly, and those natural resources (clean air, water, and soil) are vital to human health. Also, the natural beauty of parks and undeveloped land are essential to urban dwellers who would otherwise have to travel far to enjoy the natural environment.

3. *Quality of Life Impacts*

Quality of life impacts are composed of two parts, social impacts and economic impacts. These represent impacts that are not captured in the human health or ecological analyses. Economic impacts include the losses resulting from diminished recreational opportunities, a drop in tourism due to environmental degradation or loss of wildlife, loss of productivity on the job and hospitalization costs due to people being affected by pollution, and damage to crops or forest yields as a result of pollution.

Social impacts can involve an array of concerns, such as negative impacts to people's sense of community, the aesthetic loss of beautiful places, neighborhood blight created by abandoned properties (vacant housing or "brownfields"), increased vandalsim or crime, the loss of cultural heritage sights, concern for the well-being of future generations, and the inequity of impacts on different groups in society. While quality of life impacts are difficult to measure, they are extremely important. They focus attention on aspects of the environment that reflect people's values and thus are useful for understanding all the environmental problems facing your community.

AIR-RELATED PROBLEMS		
Problem area	**Potential health, ecological and quality of life impacts**	**Possible causes**
Outdoor Air Pollution • community • city-wide • regional	• Chronic obstructive lung disease • Asthma • Acute respiratory infections • Cancer • Reproductive effects • Developmental effects • Neurological effects • Economic costs from health care associated with diseases • Costs and productivity losses • Visibility • Amenity losses	• Commercial activity and industrialization • Motor vehicles and traffic congestion • Topography and climate • "Point Sources" of emissions • Coal-power generation • Poor regulations and/or lack of enforcement
Indoor Air Pollution • household • workplace	• Chronic obstructive lung disease • Asthma • Acute respiratory infections • Cancer • Lead poisoning • Infant mortality • Reproductive effects • Developmental effects • Neurological effects. • Economic costs from health care associated with diseases • Costs and productivity losses	• Poorly ventilated housing and workplaces • Smoking and passive smoking • Lead dust and paint • "Point Sources" of emissions • Radon • Animals • Pesticides • Poorly operated heating systems • Carbon monoxide • Poor regulations and/or lack of enforcement • Poor housing quality

WATER-RELATED PROBLEMS		
Problem area	**Potential health, ecological and quality of life impacts**	**Possible causes**
Surface and Drinking Water Pollution • community • city-wide • regional	• Acute diarrhea other waterborne diseases • Contaminated fish • Eutrophication and loss of aquatic life/fish • Economic Costs • Additional treatment costs • New sources of water supply • Loss of recreation • Amenity losses • Danger to people who eat fish	• Municipal and industrial wastewater disposal practices • Urban runoff • Combined sewer overflows • Agricultural practices • Poor regulations and/or lack of enforcement
Coastal Pollution • community • city-wide • regional	• Sickness due to contaminated seafood and/or direct contact • Loss of recreational resources and tourism revenues • Damage to fisheries • Amenity losses • Eutrophication	• Municipal and industrial wastedisposal practices • Urban runoff • Combined sewer overflows • Agricultural practices • Poor regulations and/or lack of enforcement

LAND-RELATED PROBLEMS		
Problem areas	**Potential health, ecological and quality of life impacts**	**Possible causes**
Degradation of Land • City-wide • Regional	• Urban blight • Exposure to hazardous substances • Erosion and siltation • Amenity losses • Reduced renewable resource base (deforestation, lost soil fertility) • Loss of natural habitat and species	• Changes of relative value of land uses • Uncontrolled urban sprawl • Land disposal of municipal and industrial waste • Illegal dumping of municipal and industrial waste • Abandoned/vacant former commercial/industrial sites (brownfields) • Poor regulation and/or lack of enforcement
Loss of Green Space and Cultural and Historical Property • Community • City-wide	• Inadequate recreation • Loss of heritage • Loss of tourism revenues • Damage to culturally valuable buildings, monuments, natural sites	• Changes of relative value of land uses • Uncontrolled urban sprawl • Poor regulation and/or lack of enforcement • Air pollution • Lack of maintenance

CROSS-MEDIA PROBLEMS

Problem areas	Potential health, ecological and quality of life impacts	Possible Causes
Municipal Solid Wastes • household • community • city-wide • regional	• Attract rodents/vermin • Costs related to blocked drainage and flooding • Water pollution from leachate • Air pollution from burning • Amenity losses • Locating disposal sites or waste transfer stations near residences	• Improper disposal and illegal dumping of waste • Poor solid waste management • Little resource recovery and recycling • Disposal impacts outside community • Poor regulation and/or lack of enforcement
Hazardous Wastes • household • community • city-wide • regional	• Exposures to hazardous substances • Accumulation of toxics in the food chain • Surface, ground and coastal water contamination • Economic and resource impacts • Reduced property values • Soil contamination	• Municipal and industrial waste disposal practices • Urban runoff • Combined sewer overflows • Agricultural practices • Poor regulations and/or lack of enforcement • Illegal dumping
Inadequate Sanitation • household • community • city-wide	• Diarrheal diseases • Parasites • Infant morbidity and/or mortality • Malnutrition • Related economic costs • Amenity losses	• Malfunctioning sewage collection system (sewage backup in the homes, sewer pipes and pumping stations, etc.) • Poor management, lack of proper operation and maintenance of sewage facilities • Inadequate hygiene education • Poor regulation and/or lack of enforcement
Inadequate Drainage • community • city-wide	• Property damage • Accidents • Reduced urban productivity (shut down of businesses, transport systems)	• Increased urban runoff due to increase in impermeable surfaces and deforestation • Blocked drains due to solid waste • Lack of maintenance

When developing your problem list, keep in mind these characteristics:

- **Comprehensiveness**: Your list of problems should encompass all the environmental threats within the scope of your assessment. Previous tasks will help you to define the scope and ground rules for your assessment and establish the importance of identifying the geographic area you will cover.
- **Consistent Scope**: To make fair comparisons across problems, the problems should be defined at roughly similar levels and scope. For instance, if indoor pollution is divided into several categories (e.g., lead and pesticides) then the water pollution problems should also be divided into a comparable number of categories with similar scopes (e.g., chemical contamination and biological contamination). If the project team wishes to look at environmental issues associated with public housing in addition to the other problems, public housing should be divided into the separate environmental issues, such as drinking water, pesticides and lead paint. This will help assure that the ranking is not determined by the sheer size of a particular problem.
- **Eliminate Overlap**: It is desirable to eliminate or at least minimize overlap between problems to prevent the potential for double counting. Overlap will occur when problems are not defined in consistent terms (such as by source or by negative impact). However, because it is not always possible to use one term to describe a problem, trade-offs must be made between minimizing overlap and generating a list that is comprehensive. In general, it is preferable to break apart problems into mutually exclusive parts in order to avoid double counting the same problems.
- **Ease of Analysis:** To avoid difficulties in analyzing your data, consider defining problems in the way data is collected and maintained by government agencies and other information sources. Specific air pollutants may be grouped into one problem because national or local governmental agencies, as part of their specific regulatory responsibilities, have collected data on these pollutants and compounds as a group. For example, the EPA publishes a Toxics Release Inventory (TRI) that describes emissions from facilities of different hazardous chemicals. Understanding the TRI grouping method will help you use TRI data most effectively.
- **Ease of Communication:** To spur solutions, problems must be meaningful and understandable to the public. If problem areas that your community at large cares about are missing or are poorly defined, your project team will have more difficulty communicating with your neighbors and gaining their support in implementing the necessary improvements.

Complete the Listing of Environmental Problems Worksheet at end of the section (pg. 33) regarding environmental problems facing your community and note why you think each problem poses a concern according to human health, ecological and quality of life impacts.

GROUPING SIMILAR PROBLEMS TOGETHER

After generating your brainstorm list, your team should try to group similar environmental problems together. For

example, air pollution from industries, transportation, and households could be one problem area, even though the problems have three different sources.

COLLECT DATA

Identifying appropriate information sources, collecting data and putting the data into a usable form is very important steps in preparing a community assessment. The data you will collect will be used in characterizing the different problems and in analyzing their impacts on community health. In addition to assembling the necessary information, the process of collecting data will help your project team to highlight data gaps and identify future data collection priorities. Data collection can be very time consuming, especially if you need to obtain information from many different organizations that have overlapping responsibilities. For example, D.C. Department of Health, Department of Public Works and Office of Planning are all sources of environmental and health data in the District of Columbia. It is critical to establish a time frame for your information collection activities and adhere to a schedule as much as possible. To make it more efficient, the task of data collection could be divided among your project team members.

1. Types of Data Needed

First, your project team needs to collect basic information about your community. Depending upon the geographic boundaries of your assessment, information about the city as a whole may be necessary as well. This basic information is important, especially to estimate the number of people impacted by the different environmental problems your project team wants to investigate.

You will probably need such basic data as:

- **Population characteristics**: Number of residents in your community; number of city residents; racial distribution; age distribution.
- **Housing characteristics**: Number of owner-occupied, renter-occupied and vacant private housing units in your community and for the entire city; number of occupied and vacant public and assisted housing units in your community.
- **Land use characteristics**: Amount of residential, commercial, industrial and vacant land in your community and for the entire city.

Community Mapping

Mapping, the insertion of basic information on existing community maps constitutes an important stage in the process of determining which impacts affect the community most critically. Mapping can serve as a tool in both the collection process by facilitating the definition of high-risk pollution areas and as an essential visual aid when communicating community assessment results with the larger community, and with govern-mental agencies or private businesses responsible for environmental protection and health promotion.

Additional information to be collected depends on the different environmental problems you decide to analyze and their different impacts on your community.

- For **human health** analysis, you will need to determine the health impacts for which the project team needs to collect data (such as types of cancer and non-cancer diseases and illnesses), the relative severity of each particular health impact (such as death, neurological damage, or physical discomfort), and the

number/percentage of people affected in your community.

- For **ecological impacts,** you will need to estimate the size of the geographic area affected, the number and type of plants and wildlife affected, the relative persistence of the impact (how reversible is the impact), and the severity of the impact (such as extinction of species, mortality, degree of contamination, or loss in productivity).
- For **quality of life impacts**, you will need to find out the direct economic and employment losses resulting from environmental damage, such as diminished recreational opportunities, or loss of human productivity due to illness. As identified earlier, social impacts can include an array of concerns--negative impacts to people's sense of community and the aesthetic loss of beautiful places are two additional examples.

For each different environmental problem, your team should collect information that will help to define the problems. For example, if your project team is concerned about pesticide use and exposure in your community, you need to collect information on the type of pesticides, how and where they are used, by whom, and how widely they are used.

2. Data Sources - Environment and Health

There are many available sources of environmental health data -- ranging from local governments to the federal EPA to national environmental and health organizations. For example, key places for information concerning Washington, D.C. demographics, health, and environment include the D.C. Office Planning, and the D.C. Department of Health. While other agencies also collect information on local conditions, these types or agencies are the best places to start. Included in Appendix B is a listing of useful national and Washington, D.C. information sources.

Environmental Data

In general, the environmental data you might seek includes information on hazardous waste sites; active industries, utilities (electric or gas companies), or commercial businesses permitted to discharge chemicals into the environment; air quality; and water quality. The publication, "Our Unfair Share" published by the African American Environmentalist Association (see Appendix B) provides much of this information on a ward-by-ward basis for D.C. Similar publications for other cities may be available.

Hazardous Waste Sites. For hazardous waste sites, a good start is to call the local or state environmental agency. The name of the agency will vary from state to state. For example, in Washington, D.C. you should call the Department of Health, Environmental Health Administration and ask for the Bureau of Hazardous Materials and Toxic Substances. Once you have the right person, ask if there are any Superfund sites (also called

Comprehensive Environmental Response, Compensation, and Liability Act or "CERCLA" sites) in or near your community. A Superfund site is an area considered so hazardous that it is eligible for federal money for clean-up, and the clean-up is overseen by EPA. Also ask is there are any other hazardous waste and "brownfield" sites. Your local government should keep additional lists of hazardous waste sites that include everything from leaking underground storage tanks at gas stations to small dump sites. Brownfields are abandoned, vacant or underutilized buildings or lots where redevelopment or expansion is slowed or complicated by concern that the site is contaminated. Ask what information about the sites is available, what the clean-up process is, and how the public might get involved. There may be a location nearby, such as a library, which keeps copies of waste site documents for the public and receives notices for public involvement meetings.

Current Active Industrial/Commercial businesses. For identifying current active industrial or commercial operations that use hazardous materials in your community, both EPA and the local department of health are good sources. It is important to identify where these businesses are located, whether chemicals they are using might enter the environment, and if people might be exposed to them in ways that could cause harm. Industrial/commercial operations may legally emit certain kinds and amounts of hazardous pollutants into the air, water and land. However, for many hazardous releases, facilities must first register with local governments and EPA and obtain a permit. Citizens can often participate in permitting decisions. In addition to these permitted and intentional releases of chemicals, accidental releases also occur. Significant accidental releases must be reported, and these records are available for public review.

The best first source of data on larger industrial operations is the EPA's Toxic Release Inventory(TRI), a computerized database on businesses that release chemicals to air, water and land. However, smaller pollution sources (such as dry cleaners, gas/auto body repair shops) are not covered by the TRI. To get information about these active facilities, you may want to look at the environmental permits they receive and any records on inspections, monitoring, emergency response plans, risk management plans, complaint and enforcement actions that might be kept by the local department of health, local fire department, local emergency planning board or EPA.

Local Air Quality. Important information on ambient air quality is available for the chemicals regulated as regional pollutants under the federal Clean Air Act: carbon monoxide, sulfur dioxide, nitrogen oxides, ozone, particulates (fine dust particles) and lead. Levels of these pollutants in the environment are measured from air monitoring stations established in selected locations. Additional air quality monitoring may occur for other toxic chemicals in your area. For pollutants that are monitored, you should check whether an air monitoring station is local close enough to accurately reflect conditions in your neighborhood. If not you may be able to arrange with local universities or other environmental organizations to conduct air quality monitoring in your community. For monitoring information and information on whether local air quality meets federal standards, contact your local or state environmental agency, such as the D.C. Department of Health Environmental Health Administration. In addition, air monitoring reports can be obtained from EPA and national environmental organizations such as Environmental Defense.

Indoor air quality can also have negative health impacts, from headaches to asthma to cancer. Many indoor air pollutants are from everyday consumer products and activities. Indoor air pollutants are often invisible and odorless, but can have damaging effects on health. Key indoor air pollutants include: second hand tobacco smoke; radon gas; molds and mildews; indoor allergens such as dust mites, cockroaches and cat dander; carbon monoxide from poorly ventilated and maintained home furnaces, gas stoves, water heaters and space heaters; chemicals in common households products such as paints, varnishes, glues and cosmetics; and pesticides used in and outside of homes, schools and workplaces. Resources on indoor air quality, potential health impacts and strategies to improve include your local or state environmental or health agency, the American Lung Association, EPA and the Consumer Product Safety Commission.

Water Quality. Water is another important route by which people can be exposed to hazardous chemicals. We use water for bathing and cooking and drinking. We also come into contact with water when boating, fishing or swimming. Water quality is important to healthy ecosystems in and around our lakes, streams and rivers. Sources of water pollution are diverse, ranging from road runoff, leaking fuel storage tanks, pipelines at homes and small businesses, and municipal landfills, to permitted and accidental releases from industrial/commercial operations. These pollutants can enter both surface waters (such as lakes and rives) and groundwater.

Contact the state or local agency responsible for drinking water safety to request data on the quality of your drinking water supply. Federal laws require that water supplies be tested at specific intervals, and that suppliers inform you of any contaminants found. Information on water supply contamination should be available to D.C. residents through annual mailings to individual water utility customers, and maintained as reports at libraries. While you are investigating your water supply, you may wish to get a map of where the water supplies in your areas are located. Find out whether there are threats such as underground storage tanks, gas stations, hazardous waste sites or road drainage outfall, near a water supply reservoir.

In addition to drinking water, you may be concerned about rivers and streams used for recreation. For information on pollution in these waters, Washington, D.C. residents should contact the D.C. Department of Health, Environmental Health Administration. Residents in other areas should call their local or state environmental agency.

RESIDENTS OFFER A WEALTH OF INFORMATION ABOUT THEIR LOCAL ENVIRONMENT

Residents in Boston , Massachusetts neighborhoods, assisted by community organizations, such as the Dudley Street Neighborhood Initiative and area health centers, have gathered information from each other in order to map pollution problems that they know exist in the neighborhood. As in many urban centers, pollution problems that were identified included transportation routes and terminals, unregulated businesses which did not have permits, and vacant lots that were often waste dumping sites. The project has been invaluable in identifying and in beginning to address important health and environmental concerns in these areas.

Community Health Status

Learning what health problems exist in your community is very useful, even if specific environmental exposures is not readily identifiable. If health problems, such as asthma, are elevated in your community, and if you are not able to determine why rates are so high, you can still take action to reduce risk factors. Efforts to address irritant outdoor pollution, poor indoor air quality, and reduce smoking could help reduce asthma rates. You also might persuade governmental authorities not to site new exposure sources, such as an incinerator or a bus depot, in or near your community.

The following routinely collected heath statistics can help you find out the status of health in your community and help in the health impact ranking of the community environmental health assessment: birth outcomes, cancer rates, mortality rates (causes of death), asthma and lead poisoning.

Birth Outcomes. Birth certificates record information on all live births including birth defect (abnormal conditions of newborn) and birth weight. About 20% of birth defects have a known causes. However, there is increasing evidence that environmental factors including diet, personal behavior and exposure to toxic substances and pollutants, may play an important role in the development of birth defects and related conditions (Pew Environmental Health Commission, 2000). The weight of newborns can be very sensitive to certain hazardous exposures. Birth certificates are usually confidential to protect individual privacy. However, your local department of health can analyze these data. They may publish yearly rates for your community compared to other areas for these reproductive health outcomes. If not, ask if they would generate these comparisons for you.

Cancer Incidence. Your local department of health may maintain a cancer registry. When a person is diagnosed with cancer, that person (referred to as "case") must be reported by the hospital to the central registry. A typical cancer registry record includes the patient's name and address, types of cancer, age, occupation, and whether the person smokes. Most information on the cancer records is confidential. However, it should be possible to get the number of people in your community with cancer by year. It is helpful to look at the rates for individual types of cancer, since they each may have different causes. The cancer registry may publish an annual report, which is available through the department of health. You may also be able to request unpublished data tailored to your specific needs. If you are planning to use cancer incidence data, contact a public information person at the department of health. Describe your information needs and ask how to apply for data.

Mortality Rates. Information contained in death certificates is another good sources of data for investigation of health problems. In many states, death certificates are public record, anyone can look at them and can use relevant information for a health study. Analysis of mortality data can be a good first step in analyzing health problems, particularly if cancer incidence data are not available.

The typical death certificate includes the following information: age, sex, race, cause of death, date of death, address and usually the occupation of the deceased. Death certificates are typically kept by the department of health in the vital statistics department. You may also wish to call them to find out what public reports they have available that list rates for your community. If not, you may want to ask the health department to analyze the causes of death in your community and how they compare to other areas.

Asthma and Lead Poisoning. Rates of various acute (short term) and chronic (long term) health problems can be related to hazardous exposures. These include asthma, which can be related to both indoor and outdoor air pollution, and lead poisoning, which can be caused by lead in paint dust, soil, food and water. Information on the incidence of childhood lead poisoning (a child newly diagnosed with lead poisoning) and prevalence of childhood lead poisoning (how many children in an area currently are lead poisoned) can be obtained from the local or state environmental agency or health department, such as the D.C. Department of Health, Environmental Health Administration. You may be able to obtain data specific to your community.

Although the incidence of asthma and severity of asthma attacks is on the rise, information at the community level is not readily available. Most often asthma information is collected from hospital admissions and discharges. The first step again is to contact your local department of health. They may have a special program aimed at addressing childhood asthma. Another source would be school nurses. Often nurses at public schools oversee the administering of asthma medication to students. They would have a sense of prevalence of asthma in schools in your community. If these data are not regularly collected, it may be necessary to arrange for a health study to look into hospital discharges, or to conduct your own community health survey.

Chronic diseases statistics are typically available for many other relevant health outcomes, such as neurological problem, heart disease and other respiratory problems. Check with your state or local department of health and the National Center for Disease Control and Prevention. In the District or Columbia, for example, check with the D.C. Department of Health, State Center for Health Statistics.

Quality of Life

Sources of data for quality of life impacts can include survey responses, public opinion polls, census data and anecdotal information. Information on economic development activities can be obtained from the mayor's office or the department of housing and community development, or local community development corporations. Or you may wish to conduct your own survey of types and amount of businesses or income generating activities in the community that serve the needs of the community. It is just as important to collect stories from community residents on the history of the community and their community health and well-being as it is to collect quantitative environment and health data for the assessment. Investigating quality of life of a community is an opportunity to connect the thoughts and wishes of long term residents and new comers, old and young, men and women, etc. and provide a social context for the assessment.

3. Environmental Health Information on the Internet

If you have access to the Internet, you have a quick and easy way to obtain environmental and environmental health information and data specific to your community. Key Internet data sources include EPA's Envirofacts Data Warehouse web site, **www.epa.gov/enviro/index_java.html/**. Envirofacts Data Warehouse contains links to water discharge permits, federal and/or state and local air permits, emissions data and facility compliance information, as well as information on small and large hazardous waste generators. The Right-to-Know Network, **www.rtk.net/**, also has many of these and other EPA regulatory databases.

The Environmental Defense's Scorecard web site, **www.scorecard.org** provides users with up-to-date information about hazardous air pollution in their own neighborhoods.

Health effects information for a variety of chemicals can be found on the Agency for Toxic Substances and Disease Registry's ToxFAQs web site, **www.atsdr.cdc.gov/toxfaq.html**, the National Institutes of Health Environmental Health Information Service web site, **ehis.niehs.nih.gov/** , as well as EPA's web site **www.epa.gov**.

Some permit, inspection records and health data, especially if they have not been computerized, may not be so easy to get. You may need to go to the agency's office to look at the records, and you may need to first file a Freedom of Information Act (FOIA) Request which allows public access to most government records. Please see Appendix D for guidance in filing a FOIA request.

4. Data Sources - Primary and Secondary

In data collection there is a hierarchy of data sources. Primary data is information that reflects the actual situation. Secondary data is information that is created based on knowledge about a situation, or collected at another site and applied to the situation at hand. Primary data sources (e.g., actual water or air quality monitoring data collected by the government) are preferable to modeled data (estimates generated by a computer program). Primary data is also data that your project team collects by its own efforts. For example, primary data could include a survey (counting and locating on a map) of all illegal dump sites in the community; a door-to-door survey of all community residents to collect information on neighborhood environmental concerns and on the number and types of illnesses they have experienced (such as cancer, asthma, diarrhea); and actual testing of each home in the community for radon or lead using the appropriate testing methods. Your project team should try to use primary data sources as much as possible.

In cases where such primary data is not available, the project team will have to use secondary data sources, like data from national or regional studies or modeled data. As your team collects data, the source should be documented by writing down the name of the contact person at a particular government agency, the title of a book, the reference for a news article, or the date and place when your team conducted their own survey.

5. Data Interpretation

Ideally, the data your team collects will provide complete and accurate information about all the human health, ecological, and quality of life impacts caused by different problems you want to cover in your assessment. In reality, data is almost always incomplete, inaccurate, out-of-date or in a difficult form to use. Thus, your team will have to be creative and use their best judgement. You should give careful thought about your community, the problems you want to analyze, and how to apply the available data. For example, if human health impacts from non-point source pollution (such as combined sewer overflows) are difficult to obtain, your team might consider investigating exposure to fecal coliform (a biological contaminant) and toxics through drinking water and bio-accumulation in fish as a means for collecting some of this information. If your project team obtains data about other communities with comparable environmental conditions, you may legitimately apply this data to your community. For example, you can use data about air pollution impacts from another community that has similar industries and a similar climate and demographic

makeup.

The worksheet at the end of this section, Collecting Data and Information (pg. 34) shows how to identify your data needs and potential sources of information for each data need. After you have conducted your initial data gathering efforts, analyzed the data you have readily available, and identified what obstacles you have encountered in your data collection activities (such as difficulties with access, cost, availability), you and your project team can then determine your options for overcoming these obstacles.

PREPARE PROBLEM SUMMARIES USING CONSISTENT TERMINOLOGY

Your problems can more easily compared and ranked if you use consistent terminology. Suggested terms are listed below. They may be useful to you in redefining and thoroughly describing each problem area.

- **Stressors** are chemical pollutants or physical impacts affecting individual species including humans or complete ecosystems. Examples include lead, carbon monoxide, particles in suspension (particulate matter or dust) and pesticides.
- **Sources** are human activities that result in the release or exposure to stressors in the environment that then can have negative impacts on humans and ecosystems. Sources include automobiles, kerosene heating, other home heating, industrial activities, including electric power plants and factories, construction activities and illegal dumping.
- **Pathways** are means of exposure by which stressors can cause negative impacts on humans or ecosystems. These include breathing, drinking, eating and touching.

- **Negative Impacts** are any changes to the environment caused by a stressor that result in harm to human health and personal well-being or harm to the health of an ecosystem. Recall the three impact categories, human health, ecological and quality of life discussed earlier. Negative health impacts include cancer, infant mortality, diarrhea or other gastro-intestinal illnesses from drinking contaminated water or coming into contact with sewage. Negative ecological and quality of life impacts include loss of fish population and aesthetic losses due to degradation of parkland.

For example, a definition of the problem area "water pollution of the Anacostia River from combined sewer overflows" might read as follows: "Raw sewage discharged from combined sewers into the Anacostia River increases levels of harmful bacteria, nitrogen, and toxics; results in contaminated fish; and renders the waters unsafe for swimming." In this example, the stressors are bacteria, nitrogen, and toxics. The source is combined sewer overflows (CSOs). The pathways are ingestion of fish and physical contact with river water. The negative impacts are contaminated fish, bacterial infections and the potential for infection with diseases such as dysentery and hepatitis.

As you review your problem list, be aware that some problems may be stated as stressors (lead in the environment, illegal dumping), some may be stated as sources of pollution (combined sewers), and some classified as negative impacts (lead poisoning or dysentery). Using the terms of sources, stressors, pathways, and negative impacts described above, you can start to redefine your initial list of problems into a set of problems with more consistent definitions. You can use this process to delineate what is

included and excluded in the description of each problem area. In order to develop meaningful conclusions from the assessment project, you should use consistent definitions.

Once you have collected all data on each problem, make photocopies of the Worksheet at end of this section, Preparing Summaries of Environmental Problems Using Consistent Terminology (pg. 35), and summarize the information for each problem, including the sources, pathways, negative impacts, criteria for evaluating impacts, existing data available and additional data needs. These problem summaries will provide each of your team members with a picture of how well your data collection efforts are proceeding and provide you with an opportunity to make any necessary corrections/additions. These summaries will also serve as the information base for your problem analysis.

WORKSHEET:
LISTING ENVIRONMENTAL PROBLEMS

ENVIRONMENTAL PROBLEM	WHY DOES PROBLEM POSE A CONCERN?		
	Human Health Impacts	**Ecological Impacts**	**Quality of Life Impacts**

WORKSHEET: COLLECTING DATA AND INFORMATION

Environmental Problems	**Relevant Data** *(known effects, emission levels, ambient levels, exposure information - number of people exposed and level of exposure)*	**Data Available**	**Information Sources**	**Data Obstacles** *(access, cost, accuracy, and availability)*	**Option to Overcome Obstacles**
A)					
B)					
C)					
D)					

WORKSHEET: PREPARING SUMMARIES OF ENVIRONMENTAL PROBLEMS USING CONSISTENT TERMINOLOGY

Problem:

Stressors:

Sources:

Pathways:

Negative Impacts:

- Health
- Ecological:
- Quality of Life:

Existing Data Available:

Additional Data Needs:

Sources of Information:

SECTION 3: ANALYZING ENVIRONMENTAL HEALTH HAZARDS AND PROBLEMS

This section describes how you can analyze your community's environmental problems so that you can compare and rank them within a common framework. To help in comparing the environmental problem areas, the project team will need to discuss and agree upon a set of criteria for evaluating the impacts of the different problems. Here are three common criteria that you can use:

- **Scale or scope**: What is the overall magnitude or size of the impact? How many illegal dumping sites or brownfield sites are located in the community? How many individuals or species are impacted? For example, the impacts from sewage backups or dumping sites are relatively localized while air pollution can impact an entire city.
- **Severity**: How serious is a particular impact? For example, environmental problems which could cause death or shorten life spans are relatively severe compared to acute skin irritations that last only a short time.
- **Persistence / Reversibility:** How long did the impact last? Will the impact last for a few years or for centuries? For example, radiation is considered to be relatively persistent because its impacts last for many years, while many types of water pollution can be reversed within a short period of time.

The success of your analysis will depend on the information you collected during Section 2. The tasks described in this section are:

Analyze Health Impacts
Analyze Ecological Impacts
Analyze Quality of Life Impacts

To assist you in preparing these comparisons, worksheets are presented at end of Section 3.

ANALYZING HEALTH IMPACTS

There are three parts to your analysis of human health. Using information that your team gathered to develop your problem area summaries with the Preparing Summaries of Environmental Problems Using Consistent Terminology Worksheet**,** your project team should follow these three steps:

1. If possible, determine different degrees of health effects at different exposure levels. In other words, does increase in exposure levels of a pollutant cause increase in frequency of health impact or number of people affected?
2. As best as possible, determine the actual exposure to residents in the community (the number of residents exposed, the duration and frequency of exposure).
3. Combine this information to estimate the magnitude of the negative impacts associated with each exposure using the terms high, medium or low for:
   a. Scale (How large is population affected?),

   High: 50% or more of the population
   Medium: 10% to 50% of the population
   Low: Less than 10% of the population

   b. Severity (How serious is the impact?):

   High: High probability of severe health effects (death, cancer, serious birth defects, etc.)
   Medium: Low probability of severe health effects and or moderate probability of chronic illnesses (asthmas, hypertension, etc).
   Low: Minimal effect

c. Persistence (How long will the impact last? Can it be reversed?):
High: Severe health effects (death, irreversible brain damage or developmental disability)
Medium: Acute but temporary effects
Low: Light and reversible health effects

The Analyzing Health Impacts Worksheet, at end of this section (pg. 39) will help you organize your information related to these three steps so you can analyze the human health impacts associated with each of your community's problems.

ANALYZING ECOLOGICAL IMPACTS

To analyze the ecological impacts, your project team should establish a link between a particular problem and its ecological impacts. Breaking each problem into its stressors is important for this step. You can then track each stressor through the environment to determine the stressor's ecological effect. Your analysis of the ecological impacts will consist of three steps:

1. Collecting data on the toxicity (harm) of stressors (such as toxic chemicals) and/or the physical impacts of a stressor (such as the impact of a dam on fish populations);
2. Determining the number of ecological receptors (number and types of fish, plants, other wildlife) and the extent of their exposure to harm from the stressors; and
3. Determining the possible response of the ecological receptors to the ecological stressors.

Building on this information and the information you collected for the problem summaries, your project team should grade every negative ecological impact (high, medium or low) in terms of:

1. Scale (How large is the wildlife population? How large is the wetland area? How many stream miles are affected?):
High: 50% or more of area of terrestrial or aquatic ecosystems
Medium: 10% to 50% of the area whether of terrestrial or aquatic ecosystems
Low: Less than 10% of the area of both types of ecosystems

2. Severity (How serious is the impact of the dam? How serious were the fish kills?):
High: Certain and severe damages
Medium: Uncertain or moderate damage
Low: Little or no ecological damage

3. Persistence (How long will the impact last? Can it be reversed?):
High: Will require several decades for affected area to recover
Medium: Will probably require 5 to 20 years for affected area to recover, if contamination is stopped.
Low: Reversible effects in less than 5 years

The Analyzing Ecological Impacts Worksheet, at the end of this section (pg. 40) can help you organize information on the ecological or ecosystem impacts associated with each of your community's problems.

ANALYZING QUALITY OF LIFE IMPACTS

Your quality of life analysis will examine the social and economic impacts of your community's environmental problems. Economic impacts may include the monetary losses resulting from diminished recreational opportunities, a drop in tourism due to environmental degradation, the loss of wildlife, loss of worker productivity, and

hospitalization costs to people affected by pollution. Social impacts may involve negative impacts to people's sense of community, the aesthetic loss of beautiful places, loss of cultural values, and increased concerns for the well-being of future generations.

Again, building on the information gathered for the problem area summaries, your project team should estimate the relative severity of quality of life impacts for each problem area and the number of people affected. Then, for every problem, your project team should grade each negative impact on your quality of life using the terms high, medium or low for:

1. Scale (How large is the population affected?)
   High: 50% or more of population
   Medium: 10% to 50% of population
   Low: Less than 10% of population

2. Severity (How serious is the impact? Lost jobs? Aesthetic losses?)
   High: Clear and substantial losses
   Medium: Uncertain or lesser losses
   Low: Insignificant losses

3. Persistence (How long will the impact last? Can it be reversed?)
   High: Solution to problem is necessary but high cost to prevent or remediate
   Medium: Solution to problem is desired, medium to high cost to prevent or remediate
   Low: Impact temporary.

The Analyzing Quality of Life Impacts Worksheet, at end of this section (pg. 41) is designed to help you organize information about the quality of life impacts associated with each of your community's problems.

WORKSHEET:
ANALYZING HEALTH IMPACTS

[Use this table to organize your information on the human health risks associated with each problem:]

Example: *Airborne toxics from industrial and transportation sources*

Negative Impact	**Scale** (How many?)	**Severity** (How serious?)	**Persistence / Irreversibility** (How long will it last?)
Example: Severe learning disorders in school children exposed to air toxin such as lead	*Example: High; all school-age children in community are affected*	*Example: High; ability to lead fully functional lives is significantly reduced*	*Example: High; learning disorders are permanent*
Example: exerbation of asthma in children exposed to air toxics	*Example: medium; 20% of children in community have asthma*	*Example: High; may lead to acute attacks and hospitalization*	*Example: low*

WORKSHEET:
ANALYZING ECOLOGICAL IMPACTS

[Use this table to organize your information on ecological impacts associated with each problem.]

Example: *Airborne toxics from industrial and transportation sources*

Negative Impact	Scale	Severity	Persistence / Reversibility
Example: contamination of waterways by deposition	*Example: Medium; only affects waterways near sources*	*Example: low*	*Example: High; some contamination can persist in river bottom soil for decades*

WORKSHEET:
ANALYZING QUALITY OF LIFE IMPACTS

[Use this table to organize your information on the quality of life impacts associated with each problem.]

Example: *Airborne toxics from industrial and transportation sources*

Negative Impact	Scale	Severity	Persistence / Reversibility
Example: odors from neighborhood businesses and industries	*Example: Medium; only affects homes adjacent to businesses*	*Example: low*	*Example: High; odor is constant*

SECTION 4: RANKING YOUR COMMUNITY ENVIRONMENTAL HEALTH PROBLEMS

One of the primary goals of conducting a community environmental health assessment is to set priorities. In order to prioritize the problem list, the project team should rank problems into high, medium and low categories of overall risk. The term risk refers to the probability and negative impact taking into consideration, scale, severity and persistence of the impact. The end result of the ranking process is a prioritized list based upon the hazards posed to public health, the ecosystem, and quality of life. This risk-based ranking provides a foundation for setting environmental priorities.

The process of ranking problems can be challenging. Deciding which problems are most serious requires many judgments about controversial facts, uncertainties, and values. The project team must make these judgments, based upon the information uncovered in the assessment and its own judgment.

After you have completed your analyses of all your community's problems, your team should then rank the problems. As project manager, you should organize a "ranking meeting" during which problems will be discussed and ranked. The process consists of two steps:

1. Ranking Human Health, Ecological and Quality of Life Problems Individually into High, Medium and Low Categories

2. Combining of All Problems for Integrated Ranking

Several worksheets for use in the ranking process are included. It is advisable to make copies of these worksheets for each of your team members well in advance of the ranking meeting.

RANKING FOR HUMAN HEALTH, ECOLOGICAL AND QUALITY OF LIFE IMPACTS

Using the information from the impact analysis worksheets, your team can develop a ranking of the environmental problems based on the human health, ecological, and quality of life impacts separately. Three worksheets, at the end of this section (or a flip chart similar to these worksheets) can be used to rank all the environmental health problem impacts (pgs. 44-46). Use broad ranking categories such as high, medium, and low. Your team's decision on what ranking, high, medium or low, to give different impacts can be arrived at through consensus or voting. Remember that not every impact can be in the highest ranking category. Try to distribute your community's environmental health impacts among high, medium and low categories.

After this ranking of impacts has been completed, you should discuss the priority given to each environmental impact to be sure that each team member feels comfortable with the ranking. You should conduct this same process three times for ranking health impacts, ecological impacts, and quality of life impacts.

DEVELOPING AN INTEGRATED RANKING OF ALL PROBLEMS

Once the health, ecological, and quality of life rankings have been completed, you should be ready to complete the integrated (or combined) ranking of your community's problems. Using the worksheets on ranking, take the information from them and fill in the information under each environmental problem on Worksheet 1, Integrated and Ranking of All Community Environmental

Health Problems (pg. 47). Complete the combined ranking for the most obvious result first. For example, if a particular problem received a low ranking for health, ecological and quality of life impacts, this problem would obviously receive a low integrated ranking. Problems that received mixed rankings will be harder to combine and may require project team discussion. By consensus, the project team should reach agreement about the combined rankings for all your community's problems.

Using the second worksheet for Integrated Ranking of All Community Environmental Health Problems - Second View (pg. 48), you can take the information about each environmental health problem from the first worksheet, and place the problems in the appropriate rankings: high, medium, or low. This chart will give you a different picture of the ranking, so you can evaluate the grouping of environmental problems. In your role as project manager, remember to discuss and review the final priority ranking with your team to make sure everyone is comfortable with the final results.

WORKSHEET 1:
RANKING HEALTH IMPACTS

HIGH ***Example: Severe learning disorders in school children***
MEDIUM ***Example: Exercerbation of asthma in school children***
LOW

WORKSHEET 2:
RANKING ECOLOGICAL IMPACTS

HIGH
MEDIUM ***Example Impact: contamination of waterways by disposition of airborne toxics.***
LOW

WORKSHEET 3:
RANKING QUALITY OF LIFE IMPACTS

HIGH
MEDIUM ***Example Impact: odors from industrial operations***
LOW

WORKSHEET 1:
INTEGRATED RANKING OF ALL COMMUNITY ENVIRONMENTAL HEALTH PROBLEMS

FIRST VIEW

	RANKING OF IMPACTS			
ENVIRONMENTAL PROBLEMS	**Health**	**Ecological**	**Quality of Life**	**Integrated**
1 Airborne toxics	**High**	**Medium**	**Medium**	**Medium**
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

WORKSHEET 2:
INTEGRATED RANKING OF ALL COMMUNITY ENVIRONMENTAL HEALTH PROBLEMS

SECOND VIEW

HIGH
MEDIUM ***Airborne toxics from industrial and transportation sources***
LOW

SECTION 5: SETTING YOUR COMMUNITY'S ENVIRONMENTAL PRIORITIES

By ranking all your community's environmental problems, your team will create a prioritized list. This ranking will give you a foundation for setting environmental priorities. However, you also need to consider the following factors in setting your priorities:

- **Community Preferences:** What environmental health problems do your neighbors believe are most important? How do these problems compare with the priorities established by your project team?
- **Governmental Authority:** Which local or federal government agencies have authority to deal with your particular environmental health problems? Can these problems realistically be solved by this government agency? (See Appendix A for listing of D.C. agencies responsible for environmental health issues). Similar agencies can be found in other communities.
- **Legal/Regulatory Requirements:** Is the local or federal government required by law to address a specific problem? Is there a specific time frame for government action?
- **Costs/Difficulty to Change:** If your project team decides to address a problem by community action, what will be the costs, what potential sources of funds can be used, and how difficult will it be to correct the problem?

Using the Establishing Priorities for Environmental Action Worksheet at the end of this section, your project team should re-examine your priority ranking and develop a final list of priority problems that you want to target for action by your community. In the first column of the Worksheet, your project team should place the final integrated ranking information (high, medium or low) based on results from the Integrated Ranking of All Community Environmental Health Problems (Second View) Worksheet. Then for each problem, each member of the project team should place a plus (+) or a minus(-) sign under each criterion to give an indication whether they believe that problem rates favorably or unfavorably in light of that criterion. Those problems with either a high or medium ranking, and a large number of plus signs, should be considered your first priorities for action. The Worksheet lists two examples of priority problem ranking -- air pollution and drinking water.

WORKSHEET:
ESTABLISHING PRIORITIES FOR ENVIRONMENTAL ACTION

	CRITERIA					SCORE
Environmental Problem	**Risk-Based Ranking**	**Community Preference**	**Legal / Regulatory Requirements**	**Governmental Authority**	**Costs / Difficulty to Change**	
Example: *Airborne toxics*	**Medium**	**+**	**+**	**+**	**-**	**High**
Example: *Drinking water*	**Medium**	-	+	+	-	Low

SECTION 6: INFORMING THE WIDER COMMUNITY ABOUT YOUR ASSESSMENT

Up to this point, your project team has worked largely without interacting with the wider community. As noted earlier, informing the broader community about your assessment is one of your most important tasks. Before your team develops an action plan, its findings should be shared with your community. As the project manager and experienced community organizer, your experience talking to communities will come in handy when you tell your community about the environmental health assessment. You will probably know the best ways to announce the results of your assessment and invite members of your community to become involved in your action plan. Remember to inform federal, state and local government, religious and community leaders too.

Part Four

An Environmental Health Action Plan

Now that your project team has identified and prioritized your community's environmental health problems, it is time to decide what you can do to remedy them. We suggest that you develop an action plan that identifies different strategies that can reduce and control environmental problems.

Broad participation by members of your community at this stage is very important. By involving your community, you can assure that the environmental actions or implementation strategies you adopt reflect the priorities of individuals and groups in the community. It is also important that members of the community are effectively educated about the costs and benefits of proposed strategies so that they can make informed decisions about implementation.

Developing an Environmental Health Action Plan includes:

Establish Environmental Goals
Identify Potential Strategies for Action
Identify Resources to Help You
Analyze, Evaluate and Select Strategies
Prepare a Draft Plan

ESTABLISHING ENVIRONMENTAL GOALS

You can begin setting your goals by focusing on your top priority problems as identified in the Setting Your Community's Environmental Priorities Section. What environmental health problems earned a high priority score? Your problem descriptions are a good starting point for developing your environmental goals because they spell out the negative impacts on your community. In setting your goals, you can change the negative into positive by expressing milestones you would like to accomplish over an extended period of time. Use the Worksheet, Establishing Environmental Goals, at end of this section (pg. 57) to help put into words your community's environmental health goals. If possible, express your goals in terms of rough numbers, such as x% in x years. These numbers will help you determine more easily whether your community is making progress toward controlling each of its priority problems.

For example, the following describes illegal dumping: *Typical domestic garbage (glass bottles, plastic bags and fast food wrappers) as well as old tires, yard waste, and demolition debris is improperly dumped in our community's public areas, neighborhood parks and abandoned buildings. These illegal dumping activities are a nuisance, pose a public health threat by attracting vermin, and reduce the aesthetic value of our parks and recreational areas*. To address this environmental problem, your project team might develop the following goals:

Goal 1: Reduce the number of illegal dumping sites by X%
Goal 2: Petition the local government to increase fines for illegal dumping
Goal 3: Take direct action to clean up these dump sites, such as organizing a community clean-up day

Once you have developed several goals, find out whether similar environmental goals might have been established under federal, state and local laws and regulations. For example, do federal, state or local laws require that drinking water achieve specific water quality standards by a certain deadline? The answer to this question may help you to make an argument that the government should

reduce contamination of your community's drinking water by a certain time.

IDENTIFYING POTENTIAL STRATEGIES FOR ACTION

Once the goals have been developed, the project team should identify specific implementation strategies that can help achieve these goals. You may want to begin this process by having a roundtable discussion among your project team about various implementation strategies. Consider inviting other interested community residents to attend this meeting.

Listed below are five broad categories of possible strategies for action:

- **Public Education and Training**: Public education and technical training of agency staff are important to the success of your overall action plan. Public education includes preparing and distributing brochures, writing newspaper articles, giving radio interviews and holding public information meetings. Technical training can teach local government staff or businesses about how to implement a program or operate a facility cost-effectively while reducing negative impacts on the environment and public health.
- **Economic Incentives**: Economic incentives can alter the behavior of polluters by increasing their costs if they continue current practices or behaviors. Unlike regulatory approaches, these incentive-based policies influence, rather than dictate, the actions of individuals and firms and allow them to find the most cost-effective means of reducing pollution in order to reduce their costs. User fees and fines are two of the most common economic incentives used by local governments. The community may pursue these strategies by lobbying state and local legislators to enact fees or fines.
- **Community Programs**: Community programs are activities that involve either collective or individual actions by community members to address environmental problems. Community programs can be operated by the local government or a local utility (e.g., Blue Plains Wastewater Treatment Plant, Delcarlia water treatment plant, PEPCO in Washington, D.C.).
- **Technological Measures**: These strategies involve the actual design, construction, and operation of specific technologies. A significant area of technological opportunity for reducing pollution is known as "pollution prevention," preventing pollution from occurring in the first place. Pollution prevention is very effective for industries, manufacturers, small businesses (such as dry cleaners, car repair garages), utilities and individual households.
- **Legal or Political Action**: Municipal laws and regulations often include a wide variety of requirements for residents, businesses, and industries concerning public safety, health and the environment. In order to persuade government authorities to strengthen their regulations, more aggressively pursue violators, or be more aware of environmental problems, community groups often must take legal and/or political action. In addition to bringing lawsuits, this strategy may include public demonstrations, boycotts, ballot initiatives, referenda, or meetings with local and federal officials.

Use the Worksheet Identifying Potential Strategies for Action (pg. 58), to help your

team identify potential strategies for your community's action plan.

IDENTIFYING RESOURCES TO HELP YOU

To help identify resources to assist you in implementing and carrying out your action plans, see the end of Workbook for listing of resources. The individuals and institutions identified there may also assist you in whatever strategies you and your project team decide to implement.

ANALYZING, EVALUATE, AND SELECT STRATEGIES FOR ACTION

Your project team's initial list of strategies may have produced a large number of possibilities. Probably not all of your strategies for action can be executed. Due to your limitations of time, finances, and technical resources, it is important for your team to evaluate each strategy against a common set of criteria to determine which strategies are really feasible. You might consider the following evaluation criteria:

- **Cost**: What are the total costs associated with a particular strategy over its lifetime?
- **Economic Benefits**: What are the economic savings and other benefits associated with a strategy?
- **Effectiveness:** How well does a strategy reduce or eliminate health, quality of life and environmental impacts?
- **Time frame:** How much time will it take to implement a strategy?
- **Acceptability:** Does a strategy have support from your community, the general public or the local government?
- **Funding**: Are there reliable sources of funding and have they been secured?
- **Legal Authority:** If the strategy requires action by the federal or local government, does it have the legal authority to act?

These criteria are suggestions, and your project team may add or substitute other criteria as it sees fit for your specific situation.

It is possible that you will need additional information in order to analyze each strategy for action. If so, your team will need to collect more information before you select particular actions. For example, if your project team decides to examine alternative recycling programs, you will need information on the cost-effectiveness of different programs, how effective the programs are in reducing the amount of trash needing disposal, etc.

After selecting the evaluation criteria and collecting necessary information on your strategies for action, your project team should analyze each potential strategy. One possible approach would be first to develop an issue profile for each priority problem. See the Worksheet, Prepare Issue Profiles (pg. 59). These profiles should contain summaries of the information your team has collected to date about each problem priority. They can serve as valuable reference points for you in deciding which strategies to implement. Each profile should include a summary describing the problem, the related environmental goals, your evaluation of these strategies, criteria for evaluating the strategies, and information collected on each strategy. Next, your project team should develop a chart using Analyzing, Evaluating and Selecting Strategies Worksheet (pg. 60), for each environmental goal that sets different strategies against the criteria to assist in the selection process.

In selecting strategies for action, you will find that a mixture of strategies that achieve both short-term and long-term results and start with small, achievable and visible progress have the strongest chances of

success. Your project team should try to approach the process of choosing these strategies in an open manner, addressing advantages and disadvantages, and arrive at a decision by consensus.

PREPARE A DRAFT COMMUNITY ENVIRONMENTAL ACTION PLAN

Once your project team has selected strategies for action, the team and any partners you have enlisted (such as established environmental organizations, universities, and/or local government officials) should develop a written community action plan. Your plan should explain your recommended strategies to address your community's environmental problems. It should also identify the specific tasks that need to be accomplished, who should be responsible for completing each task, the timetable for completing each task and associated costs. Your action plan also should include measurable goals with specific timeframes for reducing pollution or improving conditions in your community. These goals will serve as benchmarks or environmental health indicators for how well each strategy has succeeded.

Putting your action plan into writing will benefit your project team and your community in many ways. First, it will produce a written record of your team's work. Your action plan will represent the culmination of all your work in conducting your community assessment. Second, it helps you and your project team to establish both the environmental problems facing your community and the strategies you agreed are necessary to address them. Third, writing an action plan will help you in communicating the issues to community residents, local government officials, the press, and other interested parties. Fourth, the action plan can be helpful if your project team decides to seek funding from private foundations or governmental agencies. The Preparing Community Worksheet contains a suggested format for your community action plan.

From here, the next step depends upon you. Armed with your community action plan, you have identified the environmental threats, strategies to reduce the threats and how to implement the strategies. Now it is time to put your plan into action. Good luck! You and all the residents of your community deserve a cleaner, healthier environment.

WORKSHEET:
ESTABLISHING ENVIRONMENTAL HEALTH GOALS

PRIORITY PROBLEM #1:

Goal:

Goal:

Goal:

PRIORITY PROBLEM #2:

Goal:

Goal:

Goal:

PRIORITY PROBLEM #3:

Goal:

Goal:

Goal:

[List all of your community's problems in this format]

WORKSHEET:
IDENTIFYING POTENTIAL STRATEGIES FOR ACTION

Problem: [describe briefly - Example: illegal dumping]
Goals: [Example - Reduce number of illegal dumping sites]

PROBLEM:
LIST OF STRATEGIES
Example: Petition D.C. City Council to increase illegal dumping fines

WORKSHEET 1:
PREPARING ISSUE PROFILES

Problem Description:

Goals:

Evaluation Criteria:

STRATEGY	INFORMATION ON STRATEGY

WORKSHEET 2:
ANALYZING, EVALUATING, AND SELECTING STRATEGIES

Strategies	Cost	Criteria Economic Benefit	Effectiveness	Time	Acceptability	Funding	Legal Authority	Total Score
a.	+	+	+	_	+			+
b.								
c.								
d.								
e.								
f.								
g.								
h.								
I.								
j.								
k.								
l.								
m.								
n.								

WORKSHEET:
SUGGESTED FORMAT TO PREPARE COMMUNITY ENVIRONMENTAL HEALTH ACTION PLAN

SUMMARY OF RESULTS: (*Priority problems and recommended implementation strategies*):

PROJECT OVERVIEW AND HISTORY: (*Description of project, goals, and scope of activities, how the project was started, who was involved, and the different phases, research and analyses conducted*):

SUMMARY DESCRIPTIONS OF PROBLEMS, GOALS, RECOMMENDED STRATEGIES, AND TASKS (*For each problem, in order of priority*):

Problem description: (*summary of the risks associated with each problem*)

Goals and Recommended Strategies

Goal #1:

Recommended Strategies: (*description of recommended strategies; reason for recommending particular strategies and how each strategy addresses critical need*)

Task List: (*description of tasks for each strategy, when, who, and cost*):

Goal #2:

Recommended Strategies:

Task List: (*description of tasks for each strategy, when, who, and cost*):

APPENDICES (*Brainstorming list of strategies, reports on problems descriptions, issue profiles, public education materials, and data and analyses*).

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50. Tony Robinson, Executive Staff, Office of Council member Kevin Chavous

51. Joseph Glover, Ward 7 Environmental Task Force

52. Dr. Madelene Fletcher, Preventative Health Services Administration, D.C. Commission of Public Health

53. Lloyd Smith, Executive Director, Marshall Heights Community Development Corporation

54. Alberta Paul, Director, Private Industry Council

55. Don Murray, Hillcrest Heights Civic Association

56. Lorretta Tate, Marshall Heights Community Development Corporation

57. Jackie Lendsey, Greater Southeast Community Hospital

58. Paul Savage, League of 8000 Voters

59. Norris McDonald, President, African-American Environmentalist Association.

60. Beverly Baker, Anacostia Community Liaison, Chesapeake Bay Program Office, U.S. Environmental Protection Agency.

Appendix A

DISTRICT OF COLUMBIA LOCAL GOVERNMENTAL AGENCIES

DISTRICT OF COLUMBIA LOCAL GOVERNMENTAL AGENCIES

APPENDIX A

If you have a question or concern regarding an environmental health problem or environmental laws in your community, it is usually a good idea to call the appropriate local or municipal department first. Local agencies have broad powers to respond to a wide variety of concerns. They know local conditions and are in the best position to respond quickly, and have information and statistics available on local health and environmental conditions. Following is a list of local District of Columbia agencies with environment and/or environmental health responsibilities.

District of Columbia Government, www.washingtondc.gov

Mayor Anthony Williams		(202) 727-1000
City Council		
Ward 1	J. Graham	(202) 724-8181
Ward 2	J. Evans	(202) 724-8058
Ward 3	K. Patterson	(202) 724-8062
Ward 4	C. Drew Jarvis	(202) 724-8052
Ward 5	V. Orange	(202) 724-8028
Ward 6	S. Ambrose	(202) 724-8072
Ward 7	K. Chavous	(202) 724-8068
Ward 8	S. Allen	(202) 724-8045
Dept. of Consumer and Regulatory Affairs (www.dcra.washingtondc.gov)		(202) 442-4400
Building Inspection Division		(202) 442-4460
DCRA/DOH Soil Erosion & Storm Management Branch		(202) 442-4460
Historic Preservation Division		(202) 442-4460
Housing Regulation Administration		(202) 442-4600
Rental Housing Commission		(202) 442-4460
Water and Sewer Administration Permits Review		(202) 442-4460
Zoning Division		(202) 442-4460
Neighborhood Stabilization Program		(202) 442-4600
Dept. of Health, www.dchealth.com		(202) 442-5999
Office of Emergency Health and Medical Services		(202) 442-9111
Environmental Health Administration		(202) 535-2500
www.dchealth.com/eha		
Food Protection/ Inspection		(202) 535-2180
Air Quality Division		(202) 535-2255
Fisheries and Wildlife Division		(202) 535-2269
Hazardous Waste Division		(202) 535-2277
Lead Poisoning Prevention Division		(202) 535-2690
Toxic Substance Division		(202) 535-2291
Underground Storage Tank Division		(202) 535-1967
Watershed Protection Division		(202) 535-2239
Water Quality Division		(202) 535-1603
D.C. Brownfields Coordinator		(202) 535-2280
Office of Maternal and Child Health		(202) 442-5925
Poison Center		(202) 625-3333
Preventive Health Services Administration		(202) 442-5899
Radon Hotline		(202) 727-5728
Rodent Control		(202) 535-2291
State Center for Health Statistics (SCHS)		(202) 442-5865
State Health Planning and Development Agency (SHPDA)		(202) 442-5875

Testing of Drinking Water	(202) 645-6601
Dept. of Housing and Community Development (www.dhcd.dcgov.org)	(202) 442-7200
Apartment Improvement Program	(202) 442-7280
Community-Based Services	(202) 442-7290
Community Land Acquisition Program	(202) 442-7280
Distressed Properties Improvement Program	(202) 442-7280
Neighborhood Development Assistance Program	(202) 442-7290
Neighborhood Initiatives	(202) 442-7290
Dept. of Parks and Recreation (www.dcrecreation.com)	(202) 673-7647
Dept. of Public Works	(202) 673-6833
Housing Authority	(202) 535-1500
Office of Planning	(202) 442-7600
Metropolitan Police Dept. Environmental Crimes Unit	(202) 727-1010

Community Health Programs & Centers

D.C. General Hospital	(202) 546-6948
Adams-Morgan Health Center	(202) 673-7702
Anacostia Health Center	(202) 698-1930
Benning Heights Health Center	(202) 645-4161
Claridge Clinic	(202) 673-6647
Congress Heights Health Center	(202) 645-0400
Hunt Place Health Center	(202) 727-0527
Southwest Health Center	(202) 727-3611
Woodridge Health Center	(202) 541-3819
Walker-Jones Health Center	(202) 724-4973
15th Street Health Clinic	(202) 727-0395

Appendix B

ENVIRONMENTAL AND HEALTH RESOURCES

FEDERAL AGENCIES

Agency for Toxic Substances and Disease Registry
http://www.atsdr.cdc.gov/
ATSDR/U.S. EPA Region III
1650 Arch Street (3HS00)
Philadelphia, PA 19103-2029
Phone: (215) 814-3140, 1-888-42-ATSDR or 1-888-422-8737
E-mail: **ATSDRIC@cdc.gov**

The U.S. Department of Health and Human Service's Agency for Toxic Substances and Disease Registry (ATSDR) works to prevent exposure and adverse human health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution present in the environment.

Cancer Information Service
http://cis.nci.nih.gov/
1–800–4–CANCER (1–800–422–6237)

The Cancer Information Service is the National Cancer Institute's link to the public, interpreting and explaining research findings in a clear and understandable manner.

Centers for Disease Control and Prevention
http://www.cdc.gov
Phone: 1-800-311-3435
Send an inquiry at **http://www.cdc.gov/netinfo.htm**

The Centers for Disease Control and Prevention (CDC) work to promote health and quality of life by preventing and controlling disease, injury, and disability. CDC strive to base all public health decisions on the highest quality scientific data, openly and objectively derived.

Consumer Product Safety Commission
http://www.cpsc.gov/
U.S. Consumer Product Safety Commission
Washington, DC 20207-0001
Phone: (301) 504-0990 or 1-800-638-8270/Fax: (301) 504-0124
E-mail: **info@cpsc.gov**

The Consumer Product Safety Commission (CPSC) is an independent federal regulatory agency that was created in 1972 by Congress in the Consumer Product Safety Act. It provides information and educational materials on consumer product safety.

Environmental Health Information Service
http://ehis.niehs.nih.gov/
Mail Drop EC-15, NIEHS
PO Box 12233
111 Alexander Drive
Research Triangle Park, NC 27709
Phone: (919) 541-3841/Fax: (919) 541-0763
E-mail: **ehis@niehs.nih.gov**

The Environmental Health Information Service (EHIS) is an on-line service of the National Institute of Environmental Health Sciences. The EHIS provides accurate and timely information on environmental health.

Environmental Protection Agency's Brownfields Office
Office of Solid Waste and Emergency Response
USEPA Ariel Rios Building (MC-5101)
1200 Pennsylvania Avenue, NW
Washington, DC 20004
http://www.epa.gov/brownfields/

EPA's Brownfields Initiative seeks to empower States, communities, and other stakeholders in economic development to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse brownfields.

Environmental Protection Agency's Office of Air and Radiation
http://www.epa.gov/oar
Mail Drop 6101
401 M Street, SW
Washington, DC 20460
Phone: (202) 564-7400/Fax: (202) 501-0986

This office deals with issues that affect the quality of air and protection from exposure to harmful radiation. The Office of Air and Radiation (OAR) develops national programs, technical policies, and regulations for controlling air pollution and radiation exposure. Areas of concern to OAR include: indoor and outdoor air quality, stationary and mobile sources of air pollution, radon, acid rain, stratospheric ozone depletion, radiation protection, and pollution prevention.

Environmental Protection Agency's Office of Children's Health Protection
http://www.epa.gov/children/index.htm
401 M Street, SW - Mail Code 1107
Room 913 West Tower
Washington, DC 20460
Phone: (202) 260-7778/Fax: (202) 260-4103
Email: **http://www.epa.gov/children/comments.htm**

The Office of Children's Health Protection works to make the protection of children's health a fundamental goal of public health and environmental protection. The office has information on

asthma and other respiratory effects; childhood cancer; developmental and neurological toxicity; health effects of pesticides; and potential risks from contaminated water.

Environmental Protection Agency's Office of Environmental Justice
http://es.epa.gov/oeca/main/ej/index.html
401 M Street, S.W. (MC2201A)
Washington, DC 20460
Phone: (202) 564-2515/Fax: (202) 501-0740

This office provides resources and promotes outreach, communications, and partnerships for communities likely to have environmental justice concerns.

Environmental Protection Agency's Office of Ground Water and Drinking Water
http://www.epa.gov/safewater/
Ariel Rios Building (4601)
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0003
Phone: (202) 260-5543/Fax: (202) 260-4383
Safe Drinking Water Hotline: 800-426-4791

The Office of Ground Water and Drinking Water (OGWDW) works to protect public health by ensuring safe drinking water and protecting ground water. This involves forging partnerships with public and private organizations, citizens, and communities;

Environmental Protection Agency's Office of Indoor Air Quality
http://www.epa.gov/iaq
Mail Drop 6101
401 M Street, SW
Washington, DC 20460
Phone: (202) 564-9370/Fax: (202) 565-2039

The Indoor Environments Division (IED) coordinates research and develops and implements policies regarding the impact of indoor air pollutants on the general public.

Environmental Protection Agency's Office of Prevention, Pesticides, and Toxic Substances
http://www.epa.gov/internet/oppts/
401 M Street, SW (MC7409)
Washington, DC 20460
Phone: (202) 260-4109/Fax: (202) 260-0178

The Office of Prevention, Pesticides and Toxic Substances (OPPTS) promotes the use of safer chemicals, processes, and technologies; promotes life-cycle management of environmental problems such as asbestos; advances pollution prevention through voluntary action by industry; and promotes the public's right to know.

Environmental Protection Agency's Office of Solid Waste and Emergency Response
http://www.epa.gov/swerrims/
USEPA Ariel Rios (5101)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

The Office of Solid Waste and Emergency Response (OSWER) develops guidelines and standards for the land disposal of hazardous wastes and for underground storage tanks. The Office also furnishes technical assistance in the development, management and operation of solid waste activities and analyzes the recovery of useful energy from solid waste. The EPA Superfund and brownfields programs are in this office.

National Center for Environmental Health
http://www.cdc.gov/nceh/ncehhome.htm
Mail Stop F-29
4770 Buford Highway, NE
Atlanta, Georgia 30341-3724
E-mail: **ncehinfo@cdc.gov**

The National Center for Environmental Health (NCEH) promotes health and quality of life by preventing or controlling those diseases, birth defects, disabilities, or deaths that result from interactions between people and their environment. NCEH studies ways to prevent or control health problems associated with exposure to air pollution, nuclear radiation, lead, and other toxicants, as well as hazards resulting from natural and technologic disasters.

National Institute of Environmental Health Sciences
http://www.niehs.nih.gov
P.O. Box 12233
Research Triangle Park, NC 27709
Phone: (919) 541-3345

The National Institute of Environmental Health Sciences (NIEHS) works to reduce the burden of human illness and dysfunction from environmental causes by understanding each of these elements and how they interrelate through multidisciplinary biomedical research programs, prevention and intervention efforts, and communication strategies. NIEHS also sponsors grant funding programs to address community environmental health issues.

National Lead Information Center
http://www.epa.gov/lead/nlic.htm
(800) 424-LEAD

The National Lead Information Center (NLIC) provides the general public and professionals with information about lead hazards and their prevention. NLIC operates under a contract with EPA, and receives funding from EPA, the Centers for Disease Control and Prevention, and the Department of Housing and Urban Development.

PUBLIC INFORMATION ORGANIZATIONS

African-American Environmentalist Association
1216 Irving Street, NW
Washington, DC 20010
(202) 387-8445

This African American environmental organization represents minorities and low-income people through education and activism.

American Lung Association
http://www.lungusa.org/
1740 Broadway
New York, NY 10019
(800) LUNG-USA

The American Lung Association provides information on air pollution and lung disease, and education and information programs on asthma and smoking, as part of its mission to prevent lung disease and promote lung health.

American Public Health Association
www.apha.org
800 I Street, NW
Washington, DC 20001-3710
Phone: (202) 777-APHA/Fax: (202) 777-2534
E-mail: **comments@apha.org**

The American Public Health Association (APHA) is the oldest and largest organization of public health professionals in the world, representing more than 50,000 members from over 50 occupations of public health. The Association and its members have been influencing policies and setting priorities in public health since 1872.

Center for Health, Environment and Justice
www.chej.org
P.O. Box 6806
Falls Church, VA 22040-6806
Phone: (703) 237-2249
E-Mail: chej@chej.org

The Center for Health, Environment and Justice (CHEJ) was founded in 1981, as the Citizens Clearinghouse for Hazardous Waste (CCHW). CHEJ seeks to help local citizens and organizations come together and take an organized, unified stand in order to hold industry and government accountable and work toward a healthy, environmentally sustainable future.

Children's Health Environmental Coalition
www.checnet.org
P.O. Box 1540
Princeton, NJ 08542
Phone: (609) 252-1915/Fax: (609) 252-1536
E-mail: chec@checnet.org

Children's Health Environmental Coalition (CHEC) is a project of the Colette Chuda Environmental Fund, a nonprofit organization that researches the causes of childhood cancers and their relation to hazards in the environment. CHEC is a grassroots organization dedicated to educating and organizing parents and grassroots groups around the need to protect children from the threat of environmental toxins.

Children's Environmental Health Network
www.cehn.org/cehn/index.html
110 Maryland Avenue NE, Suite 511
Washington, DC 20002
Phone: (202) 543-4033/Fax: (202) 543-8797
Email: **cehn@cehn.org**

The Children's Environmental Health Network (CEHN) is a national multi-disciplinary project whose mission is to promote a healthy environment and protect the fetus and the child from environmental health hazards. The site includes information on organizations involved in children's environmental health; sources of information and data on children's health and environmental hazards; and an index if you are looking for information on a toxicant, a health effect, an exposure route, or social or political factors.

Clean Water Action
www.cleanwateraction.org
1320 18th Street NW
Washington, DC 20036
(202) 457-1286

Clean Water Action (CWA) is a national citizens' organization working for clean, safe and affordable water, prevention of health-threatening pollution, creation of environmentally-safe jobs and businesses, and empowerment of people to make democracy work. Clean Water Action

organizes strong grassroots groups, coalitions and campaigns to protect our environment, health, economic well-being and community quality of life.

Environmental Defense
http://www.edf.org/programs/health/
1875 Connecticut Ave., NW
Washington, DC 20009
Phone: (202) 387-3500
E-mail: **contact@environmentaldefense.org**

Environmental Defense (ED) works to make information about chemical pollution and its effects on human health easily accessible, while working to strengthen protections and enhance public right-to-know. The website includes a link to the Scorecard (www.scorecard.org), a powerful website that provides users with up-to-date information about polluters and pollution in their own neighborhood. Scorecard's database provides information on the real and suspected hazards of toxic chemicals; creates customized maps of residential neighborhoods showing the locations of the manufacturing facilities that report their emissions under the U.S. EPA Toxics Release Inventory; and ranks geographic areas or pollution sources using information on health risks, chemical exposures or environmental releases.

Environmental Health Network
Http://users.lanminds.com/~wilworks/ehnindex.htm
P.O. Box 1155
Larkspur, California 94977-1155
E-mail: **wilworks@lanminds.com**

The Environmental Health Network's focus is on issues of access and developments relating to the health and welfare of the environmentally sensitive.

Environmental Law Institute
www.eli.org
1616 P Street NW
Washington, DC 20036-1434
Phone: (202) 939-3800/Fax: (202) 939-3868

The Environmental Law Institute's Center for Public Health and Law designs prevention-based policies and brings them to the public policy arena. The Center is also a leader in translating new scientific advances into workable environmental policies, and in looking at the ways that science and law can interact more readily and effectively in environmental policy making. The Center is also working directly with communities to help citizens take an active role in improving the urban environment.

Environmental Research Foundation
http://www.rachel.org/home_eng.htm
P.O. Box 5036
Annapolis, MD 21403
Phone: (410) 263-1584

The Environmental Research Foundation (ERF) provides news, chemical health effects fact sheets, technical assistance, and other information on environmental issues/hazards, particularly related to environmental justice.

Environmental Working Group
http://www.ewg.org/
1718 Connecticut Avenue, NW, Suite 600
Washington, DC 20009
Phone: (202) 667-6982/Fax: (202) 232-2592
E-mail: **info@ewg.org**

Environmental Working Group is a leading content provider for public interest groups and concerned citizens who are campaigning to protect the environment. Areas of special emphasis at EWG have been the threat posed to infants and children by pesticides and other toxic chemicals and drinking water contamination by pesticides and other pollutants.

Greenpeace
http://www.greenpeaceusa.org/
1436 U Street, NW
Washington, DC 20009
Phone: (202) 462-1177/Fax: (202) 462-4507
E-mail: **greenpeace.usa@wdc.greenpeace.org**

Greenpeace seeks to protect biodiversity, prevent pollution, and promote peace, global disarmament, and non-violence through its local, national, and international offices.

National Safety Council's Environmental Health Center
www.nsc.org/ehc.htm
1025 Connecticut Avenue, NW, Suite 1200
Washington, DC 20036
Phone: (202) 293-2270/Fax: (202) 293-0032

Environmental Health Center (EHC) is a 10-year old division of the 85-year old National Safety Council, a nongovernmental, nonprofit public service organization. EHC focuses on initiatives with the media as a primary means to reach the public with information on environmental issues. EHC has expanded its role to include public education and outreach, emergency planning and management, environmental journalism, and a number of national and international communications programs.

National Wildlife Federation
http://www.nwf.org/nwf/washingtondc/
1400 16th Street, NW
Washington, DC 20036
Phone: (202) 797-6800/Fax: (202) 797-6646

National Wildlife Federation acts with the public, business, teachers, and government to educate, persuade, and promote enforcement of environmental protections for clean water, wetlands preservation, endangered species, public lands, and sustainable communities.

Natural Resources Defense Council
http://www.nrdc.org/health/default.asp
1200 New York Ave., NW, Suite 400
Washington, DC 20005
Phone: (202) 289-6868
E-mail: **nrdcinfo@nrdc.org**

Natural Resources Defense Council (NRDC) educates the public about the health threats posed by chemicals. NRDC fights to make sound science the basis for policy decisions that affect national environmental health standards and practices. In addition, NRDC has been instrumental in developing federal laws related to toxic chemicals and public health, and continues to monitor their implementation and enforcement.

Physicians for Social Responsibility
http://www.psr.org/
1101 14th Street, NW, Suite 700
Washington, DC 20005
Phone: (202) 898-0150

This national organization of health professionals is working to promote a sustainable environment, address root causes of violence, and eliminate weapons of mass destruction. Their focus is on public health aspects and the education of the medical community and the general public.

Public Interest Research Group
http://www.pirg.org/uspirg/
218 D Street, SE
Washington, DC 20003
Phone: (202) 546-9707/Fax: (202) 546-2461
E-mail: **uspirg@pirg.org**

Public Interest Research Group is a network of citizens, students, lawyers, researches, and organizers involved in environmental and consumer advocacy and research.

Right-to-Know Network
www.rtk.net
OMB Watch/Unison Institute
1742 Connecticut Avenue, NW
Washington, DC 20009
Phone: (202) 234-8494/Fax: (202) 234-8584
Email: **ombwatch@ombwatch.org**

Organized by the Unison Institute and OMB Watch, the Right-to-Know Network provides free access to numerous databases, text files, and conferences on the environment, housing, and sustainable development. With the information available on rtknet.org, you can identify specific factories and their environmental effects; analyze reinvestment by banks in their communities; and assess people and communities affected.

Sierra Club
www.sierraclub.org/toxics
85 Second Street, Second Floor
San Francisco CA, 94105-3441, USA
Phone: (415) 977-5500/Fax: (415) 977-5799

The Sierra Club, based in San Francisco, California, is a nonprofit public interest organization that engages in the advancement of public policies for environmental conservation. Sierra Club's Toxics program provides information on a variety of toxics related subjects including Superfund, brownfields redevelopment, hazardous substances, public health as related to toxics in our environment and many other issues.

The Urban Institute
www.urban.org
2100 M Street, NW
Washington, DC 20037
Phone: (202) 833-7200

The Urban Institute is a nonprofit policy research organization established in Washington, D.C., in 1968. The Institute's goals are to sharpen thinking about society's problems and efforts to solve them, improve government decisions and their implementation, and increase citizens' awareness about important public choices. The Urban Institute has resources on community-building, and neighborhood health.

Working Group on Community Right-to-Know
218 D Street, SE
Washington, DC 20003
Phone: 202-544-9586/Fax: 202-546-2461

Working Group on Community Right-to-Know is a national network of activists concerned with the public's right-to-know about chemical hazards and toxic pollution. The Working Group coordinates community right-to-know programs of more than 25 national environmental and public interest organizations and serves a national environmental network of groups and individuals in all 50 states.

World Resources Institute
www.wri.org/health
10 G Street, NE, Suite 800
Washington, DC 20002
Phone: (202) 729-7600/Fax: (202) 729-7610
E-mail: **miranda@wri.org**

This organization provides information on environmental links to breast cancer and other reproductive health problems, reduction on fossil fuel use to increase health benefits, and chemical pollution.

UNIVERSITY ENVIRONMENTAL HEALTH PROGRAMS

Harvard's Center for Global Health and the Environment
www.med.harvard.edu/chge
Harvard Medical School
260 Longwood Avenue, Room 262A
Boston Massachusetts 02115
Phone: (617) 432-0493/Fax: (617) 432-2595
E-mail: chge@hms.harvard.edu

The mission of the Center is to understand the human health consequences of global environmental change, and to promote a wider understanding of these consequences among physicians, scientists, policy-makers, the media, and the general public. Through interdisciplinary research and its educational and policy programs, the Center seeks to help people recognize that their health is dependent on the health of the global environment, and thereby to motivate them to protect it.

Howard University Center for Urban Progress
www.howard.edu
Center for Urban Progress
2006 Georgia Ave, NW
Washington, DC 20001
Phone: (202) 806-9558

The Center for Urban Progress is made up of faculty, staff, and students of Howard University and works to mobilize the university community to deal with issues of urban crises locally as well as nationally and internationally. This is achieved by developing academic programs and community leadership training, applied research activities, technical assistance and direct project implementation.

Johns Hopkins University Center in Urban Environmental Health
Johns Hopkins School of Hygiene & Public Health
615 North Wolfe Street
Baltimore, Maryland 21205
Phone: (410) 955-3720
www.jhsph.edu/ehs/urban.html

The center works to identify environmental exposures and susceptibility factors that alone or together increase risk of illness for people living in urban environments, and uses these findings to develop prevention strategies to improve public health.

Appendix C

POTENTIAL FUNDING SOURCES

FOUNDATIONS

The Foundation Center – Washington, DC
http://fdncenter.org/washington
1001 Connecticut Avenue and K Street, Suite #938
Washington, D.C. 20036
Phone: (202) 331-1400/Fax: (202) 331-1739

The Foundation Center is an independent nonprofit information clearinghouse that collects, organizes, analyzes and disseminates information on foundations, corporate giving, and related subjects. In the Washington, DC Foundation Center library, representatives of nonprofit organizations have free access to a core collection of publications and a variety of supplementary materials and services, which can help grantseekers identify appropriate funders and develop targeted proposals.

Washington Regional Association of Grantmakers
http://www.wrag.org/
1400 16th Street, NW Suite 740
Washington, DC 20036
Phone: (202) 939-3440/Fax: (202) 939-3442
E-mail wrag@wrag.org

Washington Regional Association of Grantmakers (WRAG) serves the needs of grantmakers throughout the District by fostering closer ties between funders and the nonprofit community. WRAG is a membership organization comprised of charitable trusts and corporate giving programs, and private, corporate, operating, and public charities, and community foundations. Although WRAG does not make grants or provide advice on fundraising, it may be useful for grantseekers in identifying possible funders.

GRANTS
http://es.epa.gov/oeca/oej/epagrantoffer.html

Children's Health Protection Grants
http://www.cfda.gov/static/66609.asp
Director, Office of Children's Health Protection
Environmental Protection Agency (MC 1107)
401 M Street, SW
Washington, DC 20460

These EPA-administered grants are meant to catalyze community-based and regional projects that enhance public outreach and communication; assist families in evaluating risks to children; build partnerships that increase a community's long-term capacity to advance protection of children's environmental health and safety; and promote protection of children from environmental threats through lessons learned.
Environmental Justice Community/University Partnership Grants Program

http://aspe.os.dhhs.gov/cfda/p66710.htm
Director, Office of Environmental Justice
US Environmental Protection Agency (2201A)
401 M Street SW
Washington, DC 20460
Phone: (202) 564-2515; Environmental Justice Hotline: 1-800-962-6215.

Under the Environmental Justice Community/University Partnership Grants Program (EJCUP), community-based groups can apply for funding to support projects seeking to address local environmental justice issues through active partnerships with any institution of higher education. The objective of this grant is to link community organizations with neighboring academic institutions to forge partnerships to address local environmental and public health concerns. Participation is limited to educational institutions with formal partnerships with any affected party (including community-based/grassroots organizations or other nonprofit community organizations).

Environmental Justice Grants to Small Community Groups
http://aspe.os.dhhs.gov/cfda/p66604.htm
Director, Office of Environmental Justice, (2201A)
Environmental Protection Agency
401 M Street, SW
Washington, DC 20460.
Phone: (202) 564-2515; Environmental Justice Hotline: 1-800-962-6215.

With Environmental Justice Grants to Small Communities, EPA will grant funding assistance to grassroots community-based grassroots organizations and other incorporated nonprofit organizations to support projects to design, demonstrate or disseminate practices, methods or techniques related to environmental justice. Specifically, EPA will provide assistance for environmental justice education and awareness programs; environmental justice programs; technical assistance in gathering and interpreting existing environmental justice data; and technical assistance to access available public information.

National Health Promotion Program
http://www.cfda.gov/static/93990.asp
Grants Management, Office of Disease Prevention and Health Promotion
Department of Health and Human Services
200 Independence Avenue, SW
Washington, DC 20201
Phone: (202) 401-6295

This program provides assistance to public and private nonprofit organization projects working to identify the needs of special population groups. Assistance under this program is also provided for programs identifying or developing materials for health promotion programs and adding to the scientific data base, especially to fill gaps identified in the "Healthy People 2000: National Health Promotion and Disease Prevention Objectives." The overall goal is to promote the development, implementation and coordination of programs that promote good health habits and programs that are designed to prevent disease and disability.

Surveys, Studies, Investigations and Special Purpose Grants
http://aspe.os.dhhs.gov/cfda/p66606.htm
Environmental Protection Agency, Grants Administration Division, 3903R
Washington, DC 20460
Phone: (202) 564-5325

This program is meant to support Surveys, Studies and Investigations and Special Purpose assistance associated with Air Quality, Acid Deposition, Drinking Water, Water Quality, Hazardous Waste, Toxic Substances, and Pesticides; to identify, develop and demonstrate necessary pollution control techniques; to prevent, reduce, and eliminate pollution; and to evaluate the economic and social consequences of alternative strategies and mechanisms for use by those in economic, social, governmental, and environmental management positions.

Appendix D

HOW TO FILE A FREEDOM OF INFORMATION ACT REQUEST

The District of Columbia's policy is "one of full and responsible disclosure of its identifiable records consistent with the provisions of D.C. Law 1-96. All records not exempt from disclosure shall be made available. Moreover, records exempt from mandatory disclosure shall be made available as a matter of discretion when disclosure is not prohibited by law or is not against the public interest." Classes of records that are exempted include: trade secrets and commercial or financial information obtained from outside the government; information of a personal nature, and investigatory records complied for law enforcement.

A request for a record of an agency can be made orally or in writing and should be directed to the particular agency. A requestor may be asked to submit a request in writing if it's something not customarily made available.

When a request is made in writing, both the envelope and the letter should clearly indicate that the subject is a freedom of information request. The request should reasonably describe the record and, where possible, the specific information desired – dates, files, titles, file designation, or other identifying information.

Within 10 days of the receipt of the request, the agency must determine whether to comply with or to deny the request and "dispatch its determination to the requestor."

Please note, the D.C. government agency may charge a fee for searching for the requested information and for making copies.