

PACE EH IN PRACTICE

A COMPENDIUM OF TEN PILOT COMMUNITIES



JULY 2002

ACKNOWLEDGMENTS

PACE EH in Practice builds on the dedicated work of the original authors, contributors, and field-test coordinators for the *Protocol for Assessing Community Excellence in Environmental Health (PACE EH)*. The two documents reflect the continuing partnership between the National Association of County and City Health Officials (NACCHO) and the National Center for Environmental Health (NCEH) of the Centers for Disease Control and Prevention (CDC).

PACE EH was developed by drawing on the expertise and insight of an 18-member Steering Committee comprised of representatives from federal agencies, academia, research institutions, local environmental health professions, and community action coalitions. A work group of six local public health and environmental health officials with extensive experience in assessment activities then authored *PACE EH*.

The development of *PACE EH in Practice* is further testament to the inspired work of both the community-based environmental health assessment (CEHA) Steering Committee and the work group. It is, however, the *PACE EH* field-test coordinators to whom the most profound gratitude is owed. The 15 field-test coordinators, representing 10 local public health agencies, participated in testing *PACE EH* in hopes of improving local environmental health conditions and rendering the methodology more useful for future users. The value of the published version of *PACE EH* is a direct testament to these coordinators' willingness to offer their time and expertise. *PACE EH in Practice* relates the stories of the *PACE EH* pilot-site experiences. The document also illustrates the devotion and contribution of the field-test coordinators, without whom the *PACE EH* methodology would not exist.

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NACCHO is the national organization representing local public health agencies (including city, county, metro, district, and tribal agencies). NACCHO works to support efforts that protect and improve the health of all people and all communities by promoting national policy, developing resources and programs, and supporting effective local public health practice and systems.

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PART I OVERVIEW OF THE *PACE EH* METHODOLOGY

AVERTING THE TRAGEDY OF THE COMMONS

At one point or another, nearly every person whose work centers on serving community needs is introduced to a small, but insightful, morality play known as the “tragedy of the commons.” The allegory relates the consequences of uninformed individual consumption of community-held resources. In the tale, a group of herdsman bring their livestock to a parcel of communally held land at different times throughout the year. Because each herder is selfishly concerned only about the welfare of his livestock, none takes responsibility for the well being of the land itself. Overgrazing results in the eventual death of all the herders’ livestock. Had the herdsman worked together and jointly accepted the responsibility for the upkeep of the land, all would have prospered.

The “tragedy of the commons” is more than a simple story, especially for organizations (such as, LPHAs) devoted to serving diverse community needs. It is also a searing indictment of the inability of an uninformed and uninvolved community to work together to improve the quality of life for all. *PACE EH* not only recognizes the elementary truth informing the “tragedy of the commons” in the context of environmental health issues, but also assists local public health agencies and communities in averting it.

WHAT IS THE *PACE EH* METHODOLOGY?

PACE EH offers local health officials guidance in conducting a community-based environmental health assessment and creating an accurate and verifiable profile of the community’s environmental health status. The process is designed to improve decision-making by taking a collaborative, community-based approach to generating an action plan based on a set of priorities that reflect both an accurate assessment of local environmental health status and an understanding of public values and priorities.

The methodology takes the user through a series of tasks to engage the public, collect necessary and relevant information related to community environmental health concerns, rank issues, and set local priorities for action. The following three core processes are at the heart of the *PACE EH* methodology: developing new relationships with community stakeholders, expanding understanding about the relationship between human health and the state of the environment, and redefining a leadership role for public health officials in environmental health.

The methodology involves following specific steps to answer the necessary questions involved in determining community priorities for action. The steps are represented by the following 13 “tasks.” (Refer to the *PACE EH* guidebook for more detailed information regarding the individual tasks.)

- | | |
|-----------------|--|
| Task 1: | Determine community capacity |
| Task 2: | Define and characterize the community |
| Task 3: | Assemble a community-based environmental health assessment team |
| Task 4: | Define the goals, objectives, and scope of the assessment |
| Task 5: | Generate a list of community-specific environmental health issues |
| Task 6: | Analyze issues with a systems framework |
| Task 7: | Identify locally appropriate indicators |
| Task 8: | Select standards against which local status can be compared |
| Task 9: | Create issue profiles |
| Task 10: | Rank issues |
| Task 11: | Set priorities for action |
| Task 12: | Develop action plan(s) |
| Task 13: | Evaluate progress and plan for the future |

Although the *PACE EH* methodology is laid out sequentially, it should remain flexible. In practice, the methodology is an iterative and fluid process that can be taken in as many different directions as there are communities. Further, the 13 outlined tasks are not intended to direct individual communities with regard to the type of data collected, the methods by which they are analyzed, or even the framing of the research questions. It is integral to the *PACE EH* process that the assessment teams, in direct collaboration with the community, lead the process from the earliest stage through completion. Only in this manner can the process accurately represent the needs and wishes of the people it will most directly affect.

Comprised of a mix of philosophy, practical guidance, and lessons from the field, *PACE EH* aims to create healthy communities through providing guidance not only on conducting an assessment, but also on providing a new form of leadership based on new relationships and partnerships with others in the community. In practice, the outcomes and benefits are as much about establishing a leadership role for local public health agencies and building sustainable community processes for decision-making as they are about conducting community-based environmental health assessments.

The *PACE EH* methodology has relevance for local public health agencies throughout the United States. As communities become increasingly aware of the many links between environmental degradation and human health, the need for local public health officials to address environmental health issues will escalate. A well developed and executed community-based environmental health assessment will provide local public health agencies with both a process for understanding environmental health risk and a means to communicate with, and learn from, the communities they represent. Moreover, the *PACE EH* methodology allows local public health agencies to create an action plan that approaches environmental health issues from the point of view of the community. As such, users of *PACE EH* can be confident that they are focusing their efforts on the issues deemed most important by those individuals who are the most affected.

The true “tragedy of the commons” has always been how easily such hardship could have, and should have, been avoided. Contemporary environmental health risks, mirroring the subtle yet predictable loss of land in the fable, have the potential to grow destructive through inattention and inaction. Application of the *PACE EH* methodology is a step towards ensuring that the “tragedy of the commons” remains an instructive fable rather than a glimpse of the future within the field of environmental health.

PART II

SIMILARITIES AND DIFFERENCES AMONG APPLICATIONS OF THE *PACE EH* METHODOLOGY

Local Public Health Agency	State	Size of Population Served	Jurisdiction	HD Budget (approx. \$)
Allentown Health Bureau	PA	105,000	city/urban	3,500,000
Arlington Department of Human Services	VA	185,500	county/urban	10,000,000
Barren River District Health Department	KY	209,993	county/rural	9,500,000
Delaware City/County Health Department	OH	86,046	combination	3,000,000
Island County Health Department	WA	70,300	county/rural	2,000,000
Linn County Health Department	IA	170,000	county/combination	2,200,000
McHenry County Health Department	IL	225,000	county/combination	3,000,000
Northern Kentucky Independent Health Dept.	KY	316,610	combination	7,000,000
San Antonio Metropolitan Health District	TX	1,310,501	metro/combination	35,000,000
Scott County Health Department	IA	150,979	county/combination	1,800,000

A draft version of the *PACE EH* methodology was pilot-tested by 10 communities from across the nation. LPHAs were selected as pilot sites through a competitive application process. A panel of judges assessed each application on the basis of the following criteria:

- a demonstrated ability to work with members of the community and to involve the community at-large in health agency decision-making;
- expected cooperation with and level of involvement with other key partners;
- the capacity of the health agency to conduct and complete the project;
- a demonstrated knowledge of and experience in environmental health data acquisition and assessment; and
- prior completion of a community (or community health) assessment.

In addition, a concerted effort was made to select health agencies based on their diversity (including, geographical location, type of jurisdiction, size, and population served) and a proven familiarity with community-based assessment activities.

The draft version of the *PACE EH* methodology used by the pilot sites was quite different than the final version. Although the essence of the tasks was not altered, additional tasks were added to the methodology to provide more specific instruction with regard to evaluating the process and relating specific environmental health issues to overall community well-being. In addition, the final, published version of *PACE EH* incorporated the experiences of the pilot sites in their use of the draft version of the methodology.

Analysis of the pilot-site experiences indicated that some of the tasks recommended in the *PACE EH* methodology were more likely to be altered and specifically adapted by individual users than others. Therefore, in addition to reviewing each site's *PACE EH* process in detail (see Part IV), the reader of this document may benefit by considering the general patterns and variability recognized across the pilot sites and some of the compromises made by each site when certain tasks were adapted to fit specific community needs. The following tasks were most commonly altered by the pilot communities.

TASK 3 - ASSEMBLING A COMMUNITY-BASED ENVIRONMENTAL HEALTH ASSESSMENT TEAM.

Considerable variability occurred among the sites in the recruitment and staffing of local community-based environmental health assessment (CEHA) teams. Most CEHA teams were composed of a wide range of individuals representing many facets of the community. Others were more heavily staffed and influenced by representatives of the facilitating public health agency. A CEHA process that is largely driven by the facilitating agency is likely to be less time-consuming and offer the facilitating agency a

greater degree of control over both the process and the anticipated outcomes. However, a team that represents various sectors of the community brings multiple perspectives to methodology development and problem solving. Nevertheless, based on interviews with pilot-site coordinators, three distinct attributes of an efficient and successful team emerged: diversity, commitment, and flexibility.

Field results confirm that the *PACE EH* process is greatly enriched by ensuring diversity in the assessment team and by limiting the amount of control exercised by the facilitating agency. A diverse team is defined as a group of individuals representing a broad spectrum of community interests and community perceptions. To paraphrase one pilot-site coordinator, “bring to the table individuals and groups that you would never expect to see sitting together.” That is the very essence of diversity.

Commitment is likely the most obvious attribute necessary for a successful assessment team. Any local-level, community-based assessment represents a time- and work-intensive project. Pilot-site coordinators suggested that the most effective tactic for ensuring commitment is creating and then adhering to a reasonable timeline of activities. Another suggestion was to construct an assessment process that prioritizes the benefits afforded to assessment-team members.

Time, funding, and staff limitations require creative problem solving, of which flexibility is a key ingredient. The team has to be prepared to operate the assessment in an environment of ever-changing conditions. Again, pilot-site coordinators recommend bringing in team members with broadly applicable skills and/or contacts that further encourage flexibility.

TASK 5 - GENERATING A LIST OF COMMUNITY-SPECIFIC ENVIRONMENTAL HEALTH ISSUES.

Pilot sites also differed in the way in which they generated initial environmental health issues lists. One site relied on the assessment team to brainstorm a list of local environmental health issues. Another pilot site hired professional survey consultants to develop, organize, and conduct scientifically random and valid community environmental health surveys. Because of cost restraints, most pilot sites opted for informal community surveying (i.e., they created and distributed environmental health surveys designed to provide meaningful local environmental health information but not necessarily to adhere to the strict parameters of scientific validity and reliability). Although ideally the information should be both significant and scientifically sound, most assessment teams concurred that the most valuable objective was to validate community perceptions.

Each method for developing an initial environmental health issues list has distinct pros and cons. A list brainstormed by only the members of the assessment team is quick and simple to create, but is not likely to represent fully the range of opinions and perceptions held in the wider community. On the other hand, scientifically valid and reliable community surveying tends to be very expensive and time consuming, but it offers a high degree of confidence in the value of the resulting environmental health issue list. There is also a vast range of options in the development of informal environmental health surveys. Some pilot sites included a menu of environmental health issues to be considered by respondents. Others offered specific definitions of environmental health terminology to assist lay people. Examples of the surveys employed by *PACE EH* pilot sites can be found after many of the site profiles.

TASK 7 - DEVELOPING LOCALLY APPROPRIATE INDICATORS.

Environmental health indicators are similar to the gauges on the panel of an airplane. They are measurements that provide an indication of the relative state of a significant factor in the environment. Like an airplane control panel, no single gauge can relate the status of the entire craft; each can only inform the pilot of the state of a specific factor affecting the plane. The pilot can then judge the overall status of his craft by taking into account the information provided by a combination of significant gauges. Likewise, no single environmental health indicator can relate the status of an entire system. However, a comprehensive collection of significant indicators can provide the information necessary to gauge the status of relatively complex aspects of the natural and built environment's impacts on human health.

This task is one of the more difficult to complete, largely because there are so many possible indicators for each identified issue and little guidance for establishing the value of one over another. Many of the pilot sites found the methodologic insistence on developing indicators prior to the collection and/or analysis of relevant environmental health data frustrating. One *PACE EH* pilot-site coordinator led his team to postpone the development of indicators until after ranking and priority setting, because he did not want to “waste time” on developing indicators for which no data existed or could be reasonably expected to be developed. Nevertheless, the authors of *PACE EH* maintain that allowing the development of indicators to be driven by existing data risks overlooking and undervaluing identified community concerns. Indicators based only on existing data fail to create confidence that the indicators fairly represent actual community concerns.

Recognition of the limitations of environmental health indicators is important. No ideal indicators exist. No single index of indicators can adequately represent the overall status of a system as complex as a community’s environmental health. Thus, any package of indicators will be incomplete. Relating the complexity of an airplane to that of the natural and built environment is akin to relating an abacus to a computer. That is, it is a fairly simple task to provide relatively complete “indicators” to guide the pilot, but far more difficult to create a comprehensive set of environmental indicators to guide local health officials.

Indeed, it is the complexity of the environment that lends vitality to indicator-based projects. Only the commitment and effort of participating individuals limit the scope and direction of any community-based environmental health assessment. Indicator development can, and should, represent the interests of the community. The infinite number of environmental health indicators implies that any specific environmental health issue has a plethora of possible indicators and countless methods for collecting and organizing them. In short, the existence of a multitude of environmental health indicators allows a great deal of flexibility in projects that rely on them. Viable indicators can be “tailored” to fit any given budget, workforce and/or level of scientific sophistication.

Pilot sites that adhered to the methodology found that a unique and specific benefit emerged from developing indicators for which no corresponding data exist. In such cases, an effort to begin the collection of data relevant to the indicator can be identified as a significant component of any forthcoming *PACE EH* environmental health action plans. A *PACE EH* action plan that identifies a process for collecting important but previously unavailable environmental health data is both a worthwhile accomplishment and an excellent foundation for future local environmental health assessment activities.

Indicators are “direct or indirect measures of some valued component or quality of a defined system, used to assess and communicate the status and trends of that system’s ‘health.’”

(Green Mountain Institute Indicator Training Workshop, 5/6/98)

“An indicator is something that helps you understand where you are, which way you are going and how far you are from where you want to be.”

(Sustainable Community Indicators Workshop, 6/10/98)

TASK 8 - SELECTING STANDARDS AGAINST WHICH LOCAL STATUS CAN BE COMPARED.

The wide range of responses for this task indicates the difficulty in establishing broad environmental health standards while maintaining widespread local relevance. The task calls for the establishment of locally appropriate standards against which to compare local environmental health conditions. However, the pilot sites reported having too few viable sources available for developing or identifying such standards. Existing national standards (e.g., Healthy People 2010) were often not directly relevant to the specific indicators and issues identified by the community. Some pilot-site coordinators suggested that the lack of nationally recognized comparative environmental health standards provided them the opportunity to develop the standards independently and to establish team and community confidence in their appropriateness. These teams created standards that balanced existing (i.e., limited) scientific knowledge with local, common (i.e., anecdotal) knowledge.

The *PACE EH* methodology encourages local empowerment, and local CEHA coordinators should assist the team in becoming comfortable in establishing standards that have local relevance – regardless of whether national standards support or reflect them. Unique local standards can make cross-jurisdiction comparison difficult. If future CEHA teams hope to expand their efforts or coordinate with *PACE EH* users across the state, unique local standards may become problematic. Such teams should consider keeping a detailed, written account explaining their particular standards, and the process by which they were identified, so that future *PACE EH* users can benefit from and potentially complement their work.

TASK 9 - CREATING ISSUE PROFILES.

Issue profiles are narrative reports that offer comparable sets of information for each identified environmental health issue. In Task 9, the *PACE EH* methodology recommends a standardized format for describing each environmental health issue. However, some *PACE EH* pilot-site coordinators indicated that a standardized format might not be appropriate for diverse environmental health issues. They argued that no standardized format can adequately make comparable an issue as specific as, for example, a local polluted waterway with one as broad as youth violence. They reported that the standardized format constrained their ability to present the issues in the highly distinct ways they demanded.

As indicated previously, the *PACE EH* methodology must support local CEHA team empowerment. If a team decides to employ a profile format that does not easily facilitate comparisons among the profiled issues, the team coordinator can, and perhaps should, support that. However, future teams should be aware of the difficulty of comparing issues using non-standardized formats. A standardized format offers the advantage of giving the team a common “language” with which to communicate about the relative importance of identified environmental health issues. Standardized formats can make subsequent ranking and prioritizing less difficult.

TASK 12 - DEVELOPING ACTION PLAN(S).

Sites addressed Task 12 of the *PACE EH* methodology in several ways, focusing on the following two attributes of environmental health action planning: identifying who, or what agency, is responsible for completing the plan and establishing a reasonable and beneficial timeframe for accomplishing segments of the plan. The pilot-site coordinators recognized that successful environmental health action plans had to balance control with community collaboration. Most of the pilot-site coordinators advised that a CEHA team should not approach action plans as directives for activities for which the team members are solely responsible. The best environmental health action plans identified partner organizations and community members that could take responsibility for segments of the overall strategy. However, the wider the dispersal of responsibility for an action plan, the less direct control a team can maintain over it.

Further, according to the pilot sites, environmental health action plans should support a balance between long- and short-term goals. The team and community benefited from establishing and reaching some relatively direct and quick goals. This “low hanging fruit” can go a long way toward keeping the team and the community energized in the face of more long-term, harder-to-reach action plan goals. For example, at one pilot site, one long-term goal was to reduce the incidence of skin cancer in the community by 20% in 5 years. The team, however, devised a series of milestones along the way that were relatively easy and quick to accomplish (e.g., developing a UV Index report for local media outlets). This more immediate accomplishment both served the long-term goal and offered a very clear, fairly simple, visible “success” to be celebrated by the team and the community.

The action planning processes evidenced by the *PACE EH* pilot sites indicate that short-term “successes” are vital for maintaining support and that long-term goals are vital for maintaining focus over numerous years of complex and broad environmental health action planning.

PART III

BENEFITS DEMONSTRATED THROUGH THE PACE EH PROCESS

Pilot-site communities have directly benefited by putting the *PACE EH* methodology into practice. The prevalence of these benefits across the sites suggests that future users of the *PACE EH* methodology can expect to have similarly positive and beneficial experiences.

- ***New and improved leadership role in the community regarding environmental health issues***

The pilot-site coordinators report that the professional exposure generated by the *PACE EH* process and outcomes has given the local public health agency a new and improved leadership role in addressing community environmental health issues. Some sites reported that community awareness of the *PACE EH* process resulted in a profound professional shift, establishing the local health agency as the first point of contact with regard to local environmental health issues.

- ***New professional partnerships***

The pilot-site coordinators indicated that involvement in *PACE EH* provided them access to established community planning action groups with which they had not previously had contact. One pilot-site coordinator, for example, now sits on the local planning and zoning commission. His participation in this commission ensures that the human-health impacts of ongoing construction and community expansion will be considered before the commencement of new building projects. He attributes his invitation to work on the commission to the personal and professional connections developed during his community's *PACE EH* process.

- ***New work skills***

Local public health agencies that have implemented the *PACE EH* process have found that their staff have developed new work skills (e.g., meeting management and facilitation, community collaboration, and media outreach) that benefit not only the environmental health assessment process but also all aspects of their public health work. One pilot-site coordinator contends that the *PACE EH* process has changed the way in which agency staff members approach public health practice, inspiring greater community input, broader communication, and increased accountability for programs undertaken and outcomes achieved.

- ***Confidence to take on large initiatives***

A successful *PACE EH* process can inspire facilitating agencies to consider other large-scale, far-reaching, broad-based preventive public health initiatives. Two of the pilot-site communities currently are undertaking assessment processes designed to develop strategic approaches to overall community-health improvement. Coordinators at these sites credit their involvement in *PACE EH* processes with enabling them to broaden both the scale and goals of subsequent public health activities.

- ***Broader and more flexible working definitions of "environmental health practice"***

Pilot-site coordinators reported that implementing *PACE EH* processes led their agencies in directions they had never imagined. Their communities focused on issues as diverse as teen violence, lack of green space, and suicide; for many local public health agencies, such topics traditionally are not considered as falling within the scope of "environmental health" and are often not a component of the overall local public health agenda.

- ***Local environmental health database development***

The information collected about local environmental health issues from community surveys and CEHA team investigations serves as valuable baseline data in establishing a locally relevant environmental health database. As the community reflects and builds upon the foundation started through the *PACE EH* process, the amount and value of the data will continue to increase. Pilot-site coordinators believe the material collected to date will take on broader significance as neighboring communities undertake *PACE EH* processes of their own.

- ***New relationships between local public health agencies and communities***

Traditional environmental health programs often look upon members of their communities as “clients” to be served. Pilot-site coordinators indicated that this traditional concept changes through the *PACE EH* process; the community shifts from being “clients” to being “partners” who play an active role in the identification and development of the local environmental health agenda.

A primary benefit of implementing a *PACE EH* process for the entire community is improved environmental health. The pilot-site CEHA teams have too recently completed their *PACE EH* processes to be able to pinpoint specific health outcome improvements to the environmental health of the community, but all expect to collect such information over time.

PART IV PROFILES OF PILOT SITES

In describing the experiences of the ten communities, each profile is uniquely detailed to provide an accurate account of each *PACE EH* process. While there are variations in the information presented, overall the information on each site profile includes:

- **Demographics** (Information reflects the 1990 Census data as the timeframe for conducting *PACE EH* efforts was between 1996 to 2000. In *PACE EH in Practice*, the census data is used primarily to provide an approximate snapshot of the communities' compositions.)
- **Local public health agency information** (e.g., jurisdiction size, budget, staff size)
- **CEHA team recruitment and retention methods**
- **Generation of environmental health issues list**
- **Development of indicators**
- **Ranking and prioritization processes**
- **Development of action plans**
- **Current status**
- **Advice for future users** (e.g., lessons learned, recommendations)
- **Tools and materials to facilitate processes** (the following chart provides a quick reference of the tools and documents utilized by each pilot site)

INDEX OF INCLUDED TOOLS AND MATERIALS DEVELOPED BY THE TEN PILOT COMMUNITIES

Pilot-site communities	CEHA team list	Indicator tools	Ranking tools	Prioritization tools	Developing action plan tools and samples	Survey tools	Facilitating guidelines*	Local <i>PACE-EH</i> press release
Allentown, PA	AP6		AP7	AP8	AP9-13			
Arlington County, VA	AC5				AC8-14	AC6-7		
Barren River, KY	BR7	BR9-11		BR12-21	BR22-23	BR8		
Delaware, OH	DO7		DO1-2	DO12		DO8-11		DO20-21
Island County, WA						IC8-10	IC6-7	
Linn County, IA	LC3	LC4-9						
McHenry County, IL	MC5	MC7-9				MC6		
Northern Kentucky, KY	NK5		NK9	NK10-11	NK12	NK8		NK13
San Antonio, TX	SA4							
Scott County, IA					SC9	SC4		SC11-13

* Documents developed by *PACE EH* pilot sites used to provide guidance for facilitating group surveys and/or general meetings.

This section chronicles the individual experiences of the *PACE EH* pilot-site communities. Detail is paid to the obstacles they faced, the tools they employed, and the successes they achieved. For each pilot-site community, the following statements were found to be true.

Each pilot site:

- adapted the *PACE EH* process to fit their specific local needs;
- persevered with the project and addressed local health concerns using the methodology;
- benefited from the process and would implement it again; and
- gained appreciation for their responsibilities and communities.

DEMOGRAPHICS

In the early 1990s, the city of Allentown, Pennsylvania was home to approximately 105,000 people. The city covered 17.7 square miles and contained, on average, 6,000 people per square mile, making it distinctly urban in regard to population density. Manufacturing and trade industries employed just under half (approximately 45%) of the city's civilian workforce. Approximately 10% of Allentown families had incomes below the Federal poverty line, and the number of Allentown children aged <18 years living below the poverty line was approximately 22%. The population of Allentown was predominately white; only about 12% of the population was of Hispanic origin, and 5% was African-American. English was not the primary language for approximately 17% of Allentown residents (10% spoke Spanish).

ALLENTOWN HEALTH BUREAU

The Allentown Health Bureau (AHB) employed the equivalent of 65 full-time staff members and had an operating budget of \$3,470,000. AHB housed a distinct Environmental Health Services Section (EHSS) that was responsible for environmental protection and injury-prevention programs. The EHSS had fairly extensive experience working directly with community members and partnered with state and federal agencies as diverse as the Allentown Chamber of Commerce, Pennsylvania Department of Environmental Protection, Allentown fire and police departments, and local housing services. Furthermore, EHSS maintained several local environmental health data sets, which contained pertinent information about many topics including blood lead levels, water quality, foodborne illness, and air quality.

From the outset, AHB prepared for its community-based environmental health assessment (CEHA) project, adhering to a strict timeline and producing realistic action plans. These two objectives were important determinants throughout the implementation of its *PACE EH* project and guided many assessment team decisions. The assessment component of the project took 12 months.

THE ALLENTOWN CEHA TEAM

The Allentown assessment team consisted of 18 members. AHB staff, as members of the assessment team, organized and directed the project. The remainder of the assessment team was comprised of employees of other city departments, members of the faith community, people involved in civic organizations, and employees of local and state agencies. A conscious decision was made to create a cooperative team and to avoid adding "disruptive" single-issue advocates. The team recognized that, by the time of the action planning stage, new community representatives would likely be tapped. Attendance at the monthly meetings averaged 10–16 members throughout the life of the project.

GENERATING AN ENVIRONMENTAL HEALTH ISSUE LIST

The assessment team chose to forgo any form of CEHA-specific community survey activities, instead opting to adapt locally relevant environmental health issues selected by the Allentown team. Many of the issues were identified through previous, unrelated, local environmental health research. The issues were refined and often redefined through assessment team discussion.

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INFORMATION: (610) 437-7702**

DEVELOPING INDICATORS, STANDARDS, AND ISSUE PROFILES

For standards, the Allentown team decided to use Healthy People 2000 Objectives¹ in the development of indicators to track environmental health status for the community. Applicable objectives were identified in relation to the existing environmental health issues. Appropriate community environmental health indicators were developed and incorporated in issue profiles. AHB staff, student interns, and one member of the Allentown assessment team were responsible for collecting and analyzing data and developing the environmental health issue profiles.

RANKING AND PRIORITIZING THE ISSUES

The Allentown team redrafted and/or edited many of the ranking and prioritizing “tools” offered in the draft version of *PACE EH*. They consulted with the authors of *PACE EH*, other pilot-site coordinators, and experts in the field of community-based environmental health assessment to develop a more appropriate ranking and prioritizing methodology for their *PACE EH* process.

The Allentown team identified a list of 36 environmental health issues, each of which was ranked on a relative scale of 0–30. Voting members of the assessment team ranked each issue after considering the following factors.

- **Relative Risk**
- **Duration of Exposure**
- **Degree of Harm**
- **Distribution of Risk**

The top 10 issues were identified for consideration in the priority-setting phase of the project. The assessment team evaluated the most highly ranked environmental health issues in light of the following nine pragmatic conditions and community values.

- **Political Support**
- **Preventability**
- **Cost Effectiveness**
- **Level of Control**
- **Actual or Potential Economic Loss**
- **Public Demand**
- **Regulatory Changes**
- **Confidence in the Science**
- **Quality of Life**

Each assessment-team member assessed, on a scale of 1–5, the relative importance of each of the nine criteria. The scores were averaged and used to produce a weighted list of criteria. Then, in a round-table setting (comprised of approximately 10 voting members), each of the top 10 environmental health issues was presented and discussed with regard to the weighted pragmatic conditions and community values. Every issue was considered in relation to each criterion. The team members then collaborated to develop a consensus score (1-3) for each combination of issue and criterion. In Allentown, the assessment team decided that the eight top priority issues would form a basis for action planning.

Example: “Preventability” might be deemed very important (e.g., score of 5) by the assessment team. Then, asthma (the issue) would be considered in light of “preventability” (the criterion). A “1” would indicate that the issue could not be reduced before it becomes problematic, while a “3” would mean that the issue could be reduced significantly prior to emergence. Factoring together the weighting of the criterion and the scoring of the issue produces a prioritized environmental health issue.

¹ U.S. Department of Health and Human Services (HHS), Healthy People 2000: National Health Promotion and Disease Prevention Objectives, (Washington, D.C.: the Department, 1991)

The prioritization methodology used by the Allentown assessment team had several advantages. Most importantly, it was a quick and accurate way of prioritizing many environmental health issues in a relatively short period of time. It required the active participation of the full assessment team and allowed each member an opportunity to discuss the appropriate priority grade for each issue.

The methodology also tied together the ranking and prioritizing exercises such that the final list balanced community values, action-taking potential, and relative risk for the given issue. Furthermore, the methodology resulted in a priority-setting exercise that, having taken into account the opinions and expertise of the assessment team, led easily and confidently to environmental health action planning.

The design of the Allentown ranking and priority-setting exercises virtually ensured active participation from all assessment-team members. The Allentown methodology relied upon the active participation of the entire assessment team to ensure environmental health action plans that accurately reflected the team's opinions and expertise. Thus, in Allentown, the *PACE EH* coordinator was tasked with inspiring and maintaining the participation of the team during round-table discussions. If participation lagged, or debatable points went unchallenged, the Allentown coordinator resorted to two specific tactics to re-invigorate the proceedings.

1. *The coordinator singled out and called upon team members that he knew had unique and specific outlooks in relation to the issue under discussion.* For example, during a priority-setting exercise, a team member with professional ties to a crisis-center hotline initiative was called upon to discuss the increasing number of local teenagers attempting suicide. Another team member with professional knowledge about local safety-code regulations was singled out to inform the team about institutional radon detection.
2. *The coordinator inspired members' participation regarding specific issues by presenting debatable points to spark open discussion.* For example, during a priority-setting exercise, the coordinator argued that "unsafe consumer products" should not be considered a high priority because many agencies exist that already concentrate on this issue. His controversial proposal inspired a team member to point out that the findings of such agencies are not widely sought out, or known, by the general public.

Through use of these two tactics, the group generated a context for debate over the issues. The round-table debate, in turn, generated active participation among the entire assessment team. The Allentown CEHA coordinator engaged the assessment team and incited activity and involvement. Thus, the value of the priority-setting group process was directly attributable to the enthusiasm and inventiveness of Allentown's project coordinator.

The Allentown CEHA prioritization methodology might have been hampered by some inherent limitations. For instance, the relatively narrow range of the prioritization criterion scales (i.e., 1–3) resulted in little differentiation between the highest and lowest ranked priorities.

Further, the round-table discussion process, which is designed to bring about consensus in assigning a given priority grade, could be influenced by the "strong leader" factor (i.e., team members committed to a particular grade for a given issue and criterion may have swayed the opinions of other team members through the passion of their presentation).

Also of potential concern is the relatively small number of people who were entrusted to participate in the exercises. With little differentiation among the priority grades, the absence or presence of even a single team member might have affected the final grade. Because the final grades formed the basis of the action plan, the participation (or lack thereof) of individual assessment team members at the ranking and priority-setting exercises may have altered the outcome of the plan.

A final concern is the appropriateness of applying a narrow spectrum of numerical scores to inherently complex environmental health issues. For example, can public concern about an environmental health issue such as “foodborne disease” be fairly described as of “low,” “moderate,” or “high” concern? Some outbreaks are of large public concern, others are not. For instance, people tend not to worry about most foodborne disease because it is often not fatal or publicized. However, when an outbreak is fatal or made public, the community becomes concerned. Therefore, the narrow range of choices in the prioritization process might not represent accurately the complexity of the issue it sought to address.

Overall, the Allentown prioritization process was an efficient and effective way of setting priorities among many disparate environmental health issues. It relied upon the participation and inspiration of a relatively small and committed work group. It engaged the assessment team, represented consensus opinion among team members, and provided the impetus to establish CEHA action plans in an efficient manner. *PACE EH* project staff in Allentown indicated that the ranking and priority-setting exercises were well received by the assessment team and were overwhelmingly successful at achieving the goals set forth by the project coordinator.

The Allentown assessment team decided to collapse the top eight prioritized environmental health areas into the following four distinct environmental health issues:

- residential injuries;
- violence;
- foodborne diseases; and
- indoor air quality.

ACTION PLANNING

Subcommittees were formed to simultaneously develop specific five-year action plans for each issue to be used by numerous community agencies and individuals. They were not developed as exclusive AHB plans. As such, each subcommittee sought to develop partners and build community initiatives to facilitate the adoption and implementation of their action plan. The Allentown assessment team approached action planning as a logical and necessary opportunity to recruit new members and expand working partnerships. The action plan development process took 3-12 months, depending on the specific issue being addressed.

CURRENT STATUS OF THE *PACE EH* PROJECT

In 1999 and 2000, AHB began integrating the objectives and intervention/prevention activities from the *PACE EH* action plans into their annual program plans. More than 90% of the interventions currently have been implemented and have become part of the AHB annual planned programming. The community now provides AHB with programming direction. The current objectives of the *PACE EH* process also serve to validate past and present AHB programming. New partnerships and coalitions have been formed, giving AHB staff members new and wider perspectives on many environmental health issues. For community members, those involved in the *PACE EH* process gained knowledge of and a better appreciation for the field of environ-

mental health. As such, they will be more likely to participate in the future. Overall, the AHB has enhanced three of their program areas with new initiatives and has addressed a completely new program area without hiring additional AHB staff. The new programming was made possible through redirection of resources.

ADVICE FOR FUTURE USERS

1. Before taking on the project, contact several health departments that have completed the *PACE EH* process to get a better idea of the commitment involved, gain useful tips, and avoid duplicating mistakes.
2. Get support for the project from the top down. Make sure the top elected officials and administrators support the department's involvement.
3. Get potential assessment-team member names from elected officials, administrators, and relevant regional advisory groups. Get a commitment from the Board of Health (and/or other relevant regional advisory groups) and the department staff that will be involved.
4. Keep assessment-team membership small (i.e., 15–20 members).
5. Get a commitment from the team members that they will make it a priority to attend meetings and participate in the process.
6. Develop a time-limited schedule for the project. AHB scheduled 12 morning meetings, each lasting 1.5 hours, on the same day each month and adhered to the schedule. Homework was assigned as needed to stay on schedule.
7. The Project Coordinator should plan to spend a significant amount of time over several years conducting the assessment and developing action plans. At a minimum, 50% of a staff person's time should be budgeted for the project.

PACE EH TOOLS AND DOCUMENTS USED BY THE ALLENTOWN HEALTH BUREAU

- A. Community Environmental Health Assessment Team
- B. Guidance for Environmental Health Issue Ranking
- C. Guidance for Environmental Health Issue Priority-Setting
- D. Guidance for Developing Environmental Health Issue Action Plans
- E. Draft Action Plan for Food Safety

CITY OF ALLENTOWN

COMMUNITY ENVIRONMENTAL HEALTH ASSESSMENT TEAM

MEMBER ORGANIZATIONS

8th Ward Neighborhood Block Watch

Franklin Park Civic Association

Pennsylvania Department of Environmental Protection

Pennsylvania Department of Health

St. Luke's Lutheran Church

Allentown School District

6th Street Shelter/Community Action Committee of the Lehigh Valley

Allentown Police Department

Allentown Fire Department

Allentown Planning Bureau

Allentown Water Resources - Wastewater Bureau

Allentown Health Bureau

Lehigh County Conference of Churches

Board of Health and Mental Health/Mental Retardation - County of Lehigh

Representative for St. James AME Zion Church

- The issue ranking tool, to uncover reasons why an issue is considered significant, is used;
 - to better characterize an environmental health issue by describing how the risk is distributed across geographical place, differing sub-populations, and time;
 - as a quick environmental risk scan;
 - to assess the team's knowledge and attitudes about a particular environmental health concern; and
 - to evaluate each issue in a subjective fashion to assess the team's perception of local impact of the issue.
- The CEHA team evaluates the information contained in each environmental health profile in comparative fashion; the team
 - makes judgements about the relative importance of each issue against all other issues facing the community; and
 - groups the issues according to level of concern.
- The CEHA team uses a voting process to reach a group consensus during the evaluation.
 - Where there is considerable debate or controversy, the collection of more information is indicated.
- At the conclusion of the issue ranking exercise, each CEHA team member will summarize the importance of the issue by scoring it as a high, medium, or low concern.
 - Issues are ranked relative to one another.
 - The decision made by the team member involves judgement and is therefore an expression of personal values.
- Issues of "high" concern will be prioritized.

C

GUIDANCE FOR ENVIRONMENTAL HEALTH ISSUE PRIORITY SETTING

RANKING VERSUS PRIORITY SETTING

- **Ranking** describes the risk, duration of exposure, degree of harm, and distribution of risk across the population.
- **Priority Setting** is dependent on factors that extend beyond the control of public health professionals. Environmental health issues are viewed in the context of legal, economic, social, and political factors. These factors relate to decisions based on community beliefs.

PRIORITY SETTING

- The criteria used for priority setting of environmental health issues are as follows.
 - Political pressure/Support
 - Public demand/Perceived urgency
 - Confidence in the science/Uncertainty of information
 - Cost effectiveness/Cost per life saved
 - Need for social action/Regulatory change
 - Voluntariness/Level of control
 - Funding/Economic loss
 - Quality of Life
 - Preventability
- Local issues are addressed within the context of county, state, and national interests.
- Often the solution to a local environmental health problem relies on interventions on a much larger scale.

GUIDANCE FOR DEVELOPING ENVIRONMENTAL HEALTH ISSUE ACTION PLANS

Strategies will be developed to address the environmental health issues of greatest concern to our community. For each issue, the assessment team will engage in strategic planning, which will include the following steps:

1. DEVELOP A GOAL AND OBJECTIVE(S)

2. IDENTIFY CONTRIBUTING FACTORS

- Includes environmental agents, health risks, and public health protection factors.

3. IDENTIFY INTERVENTION/PREVENTION ACTIVITIES

- Individual-based interventions focus on changes in individuals.
- Community-based interventions focus on creating changes in populations.
- System-based interventions focus on creating change in organizations, policies, laws, etc.
- Primary prevention focuses on preventing disease, disability, or dysfunction before it occurs.
- Secondary prevention focuses on early detection and prompt treatment of an existing problem.
- Tertiary prevention focuses on limiting further negative effects from a problem.

Community-based or system-based interventions and primary prevention are likely the most appropriate options.

4. IDENTIFY COMMUNITY ASSETS

- To assist in the implementation of each intervention.
- Resources available at state or federal levels should be researched.

5. IDENTIFY POTENTIAL BARRIERS

- Those that may hinder implementation of each intervention.

6. SELECT THE MOST APPROPRIATE INTERVENTION(S)

The feasibility of each possible intervention should be assessed; the PEARL test is one way to identify acceptable options. The PEARL test includes an evaluation of the following criteria:

P - *Proper and politically feasible*

Is the intervention suitable?

Is any special authority or permission required?

E - *Economic*

Does it make economic sense to address the problem with the intervention?

Are there economic consequences if the intervention is not carried out?

A - *Acceptable*

Will the community accept this intervention?

Is it consistent with local norms and values?

R - *Resources*

Are there local resources or expertise? Can it be obtained?

Is financial support available, or potentially available?

L - Legal

Do current laws allow this intervention?

Are there mandates that might interfere?

If any intervention is found to be unfeasible, a plan for making it feasible should be developed. If, for instance, financial support is not available, a means of leveraging resources should be identified.

7. IDENTIFY RESOURCES AND APPROPRIATE PARTIES

- To assume/share responsibility for undertaking intervention activities (i.e., health department staff, members of the community, and other agencies).

8. DEVELOP A TIME FRAME FOR COMPLETING ACTIVITIES**9. DETERMINE HOW SUCCESS WILL BE MEASURED**

- Achievement of objectives and goal will verify success.

10. EVALUATE PROGRESS TOWARD GOAL PERIODICALLY

ACTION PLAN FOR FOOD SAFETY



Goal: By December 31, 2003, reduce infections caused by key foodborne pathogens to incidences no more than:

<u>Disease Agent</u>	<u>Incidence per 100,000</u>
Salmonella species	14
Campylobacter jejuni	21
Escherichia coli O157:H7	≤ 2
Listeria monocytogene	≤ 0.5

Baseline: Five-year average incidence for 1993-1997=Salmonella (15.2). *Campylobacter jejuni* (23.4), *E.coli* O157:H7(0), *Listeria monocytogene* (0).

Source: Allentown Health Bureau, Communicable Disease Surveillance Reports

Objective I: By December 31, 2003, increase to at least 75% the proportion of households in which the principal food preparers routinely a) refrain from leaving perishable food unrefrigerated for > two hours and b) wash cutting boards and utensils with soap after contact with raw meat and poultry.

Baseline: To be determined by local survey.

Source: Allentown Health Bureau data collection project.

INTERVENTION/PREVENTION ACTIVITIES:

1. Convene a special task force of local food safety professionals that will identify and solicit the cooperation of agencies to assist in the delivery of a comprehensive food safety awareness campaign by March 1999. The campaign will be conducted through 2003.
2. Survey the local community utilizing the food safety questions contained in the 1995 Behavioral Risk Factor Surveillance System to establish a local baseline of food safety knowledge by September 1999. Re-survey the local community by December 2003.
3. Develop and implement a public food safety awareness campaign using materials developed for the national FIGHT BAC campaign by June 1999.
4. Identify and solicit cooperation from local organizations (e.g., food banks, non-profit agencies, and churches) to assist in the public campaign to deliver food safety messages by December 1999.
5. Develop an awareness campaign for children about food safety issues (e.g., handwashing) by December 1999. Targeted messages will be delivered annually to all nursery schools and child care facilities.
6. Solicit the Nutrition Education Department of Cedar Crest College to select "Food Safety" as a theme for future poster contests by December 2000.
7. Continue to conduct "Home Food Safety" presentations in Allentown School District middle school family living classes each year. (Approximately 12 annually)

8. Continue to respond to all invitations from public groups to provide a speaker or participate in health fairs on the topic of "Home Food Safety." (Approximately four annually)
9. Develop and distribute to local media four annual seasonally-relevant public service announcements (e.g., safe grilling in summer) that promote safe food handling practices in the home beginning in 1999.
10. Continue to respond to each inquiry received from the public about proper food safety techniques and provide appropriate written information whenever possible. (Approximately 100 annually)
11. Maintain distribution efforts of "Home Food Safety" materials (e.g., brochures and magnets) to customers at 20 licensed food service establishments.
12. Assure the display of a food safety-related placard, for 1 month each year, in the bus fleet of the local mass transit authority.
13. Assure continued distribution of home food safety materials by other health bureau program personnel.
14. Develop a set of non-traditional innovative signs to promote handwashing for use in public restrooms by January 2000. One hundred public restrooms will be targeted each subsequent year through 2003 for placement of the signs.

Objective II: Through 2003, educate food service operators and personnel in safe food handling practices and sanitation.

INTERVENTION/PREVENTION ACTIVITIES:

1. Develop (or identify) introductory food safety educational materials directed at food service employees and target their use in moderate and high risk facilities where formalized employee training is unavailable by December 1999. One hundred facilities will be targeted annually.
2. Offer and conduct on-site food safety training annually to 20 food service facilities where volunteers serve as food preparers by December 2000.
3. Include updates about new food technologies and equipment in annual license renewal mailings to all food service establishments beginning January 2000.
4. Conduct a minimum of 25 on-site training sessions annually for the food service staff of new food service facilities or those with marginal sanitation history through 2003.
5. Promote and advise food service operators during inspections about the availability of food manager certification courses required by the State Act No. 131 of 1994 beginning January 1999.
6. Assure the continued distribution of visual reminders and instructions pertaining to food safety issues (e.g., food temperature requirements) to all licensed operators during inspections.

7. Continue to assess the level of food safety knowledge of all applicants for food service licenses (permanent and temporary) by evaluating their responses to basic food safety questions included in the license application. All inaccurate responses will be discussed with applicants before the issuance of the license.

Objective III: Continue to meet the annual program plan objectives through 2003.

INTERVENTION/PREVENTION ACTIVITIES:

1. License and inspect all food service establishments, including PA Department of Agriculture (DOA) registered retail food facilities, mobile food units, temporary food stands and potentially hazardous food vending machines.
2. Maintain standardized food service plan review, licensing, and inspection procedures.
3. Efficiently allocate program resources through the use of food hazard risk assessments.
4. Require compliance through administrative conferences and appropriate legal action in licensed food service facilities where chronic or severe violations are identified during inspections.
5. Fulfill the obligations of the 1997 Agreement with the PA Department of Agriculture for food service regulatory activities to be conducted in the City of Allentown.
6. Maintain the foodborne disease surveillance system to appropriately respond to reports of problems dealing with a food or illness possibly attributed to a food.

DEMOGRAPHICS

Arlington County is an urban area of about 26 square miles that is situated across the Potomac River from the Nation's capitol. Conveniently accessible by either public transportation or automobile, Arlington attracts a diverse residential and employment community. According to the 1990 Census, the racial composition for whites, blacks, Asian-Pacific Islanders, and other races were 76.6%, 10.5%, 6.8%, and 6.2%, respectively. Residents of Hispanic origin comprised 13.5% of the total population.

ARLINGTON DEPARTMENT OF HUMAN SERVICES

The Arlington Department of Human Services (ADHS), the facilitating agency in undertaking the *PACE EH* initiative, is an umbrella agency responsible for coordinating and supporting the delivery of services to 185,500 people. The ADHS employs approximately 188 full-time staff members and has an operating budget of \$10,000,000.

ADHS is familiar with conducting community health assessments and fostering partnerships and thus has a tradition of involving community partners in program planning decisions. ADHS serves as a catalyst for regional cooperation in many areas, including enforcing food and swimming pool safety codes, performing a broad review of the overall human-services delivery systems in Arlington County, and designing interventions to protect the water supply for the Washington metropolitan area.

BEGINNING THE *PACE EH* PROCESS

One of the more difficult tasks undertaken before the *PACE EH* methodology could be employed was garnering internal agency support. Although not all local public health agencies are required to obtain official approval, in Arlington County, approval was needed from the County Manager before the process could commence.

Once approval was obtained, staffing needs were addressed. Although ADHS provided the majority of staff time and resources, outside assistance was also needed. For instance, a graduate student from George Washington University School of Public Health (GWU) was enlisted to work 20 hours per week with the project as part the MPH internship requirement. Faculty from GWU and Georgetown University School of Nursing were recruited to work on data analysis, and two staff members from the Department of Environmental Services dedicated about 10% of their time to the *PACE EH* process.

THE ARLINGTON CEHA TEAM

A community-based environmental health assessment (CEHA) Steering Committee of eight people was formed. This core group then solicited citizens and key agencies and organizations for participation on the CEHA team, making sure to have representation from minority and disenfranchised individuals. As a result, a full CEHA team (which included an additional 20 members) was established representing ADHS, George Washington and Georgetown Universities, League of Women Voters, United Way, Department of Public Works, Arlington Health Foundation, National Environmental Health Association, Phoenix House, Department of Environmental Quality (Northern Virginia Regional Office), Virginia Environmental Health Association, and Department of Environmental Services (County).

FOR MORE INFORMATION: ARLINGTON COUNTY DEPARTMENT OF HUMAN SERVICES ENVIRONMENTAL HEALTH BUREAU (703) 228-7400

Arlington employed a survey as its data-gathering method to a) involve the community in the process of generating an environmental health issue list and b) determine the community perspective of the environmental health status of Arlington by surveying a reasonably representative sample. Two criteria were used to determine whether a particular issue was included on the questionnaire: whether it was an environmental health issue and whether the issue had directly impacted Arlington County. As a result, the following 17 environmental health issue categories were included in the survey:

- possible disasters
- unintentional injuries
- energy sources
- outdoor air pollution
- commercially used hazardous materials
- inappropriate disposal
- sanitary inspections
- sanitary system
- disease carriers
- transportation accidents
- construction
- noise
- indoor air pollution
- dangerous chemicals in home
- food safety
- drinking-water contaminants
- streams/storm-sewers/rivers

The CEHA team divided into two groups after the questionnaire was developed. One group volunteered to focus on community outreach, working with the community in disseminating and collecting the surveys. The other group was involved in the analysis of the results from the questionnaire and further data collection.

A pilot test of the draft questionnaire was conducted and distributed to the League of Women Voters and to a drug treatment center. The CEHA Steering Committee then identified the survey population as residents of Arlington County (people who worked in Arlington County and lived in another jurisdiction were excluded) to receive the final version of the survey. The survey was available in Spanish and English and administered in group settings. To reach a broad and diverse population, the questionnaire was administered to the following organizations and community members:

TARGETED AUDIENCES

- WIC Program
- Service organizations (e.g., civic associations, Rotary Club, and the Civic Federation)
- Churches
- Senior centers
- Arlington Free Clinic
- Phoenix House
- League of Women Voters
- Teen Weight Lifting Club

BROAD COMMUNITY

- Jury pool
- Animal Welfare League
- T.J. Recreation Center

During the two-month period the survey was administered, over 400 responses were obtained. The results from the survey were not intended to include strict statistical validity. Instead, they were juxtaposed with the scientific data to help ensure that identified strategies were on target. Although many environmental health concerns were identified upon evaluation of the survey results, the top four issues included outdoor air pollution, transportation accidents, disease carriers, and food safety.

DEVELOPING INDICATORS

Contrary to the *PACE EH* methodology, the CEHA team decided not to develop indicators until after data collection. With limited time and resources, the team ascertained that developing indicators supported by data was a more reasonable and effective approach than identifying indicators unsupported from the data gathered.

Indicators for food sanitation were developed after data were collected. The CEHA Steering Committee is currently developing indicators for the rodent-control program (e.g., food source and harborage).

CREATING ISSUE PROFILES

Once all survey administration was completed and the results tabulated, the CEHA Steering Committee decided to profile the issues, because a) doing so provides a basis for obtaining information through a survey tool and b) collecting scientific data can help narrow the issues to the top four or five. Issue profiles for 12 of the 17 environmental health categories were developed using a modified version of the profile tables from the *PACE EH* guidebook (see the following text box). However, 11 categories of the issue profiles were actually completed because there was some overlap between the construction and indoor air pollution categories.

INFORMATION INCLUDED IN THE PROFILES

- **Geographic**
How does this affect our community, relative to the following (e.g., region, neighborhood/zip code, and county)?
- **Magnitude**
How many people does it affect?
- **Sensitive Populations**
Who is affected (e.g., pregnant women, immunocompromised people, people with asthma, children, and elderly people)?
- **Scientific Data**
- **Reason for Concern**
Is the issue/risk associated with the following (e.g., high mortality rate, high morbidity rate, and reduced potential life)?
- **Trend**
Is the condition or risk improving, staying the same, or worsening?

RANKING AND PRIORITIZING

Of the remaining 11 categories for which issue profiles were created, the CEHA team then made presentations regarding the environmental health data and survey results for each of the categories. Afterward, each CEHA Steering Committee member was tasked with assessing each issue as a high, medium, or low concern for environmental health in Arlington County. A “sticky dot” method of identifying the top four issues was then used. As a result of this process, outdoor air pollution, transportation accidents, food safety, and disease carriers were the four issues that emerged of greatest significance. Intervention strategies were then identified and proposals were discussed.

CURRENT STATUS OF THE *PACE EH* PROJECT

The ADHS is now in the process of implementing strategies that respond to the top four issues. Having selected “disease vectors” as one of its four priorities, the county moved the rat control program under the Environmental Health Bureau and chose last year to fund an arbovirus control program in response to concerns about West Nile Virus. Building on CEHA results the health department has received funding to implement a pedestrian safety program (responding to the transportation safety issue) and funding to develop a field experience for public health nurses in environmental health using food sanitation as a core experience for the nursing students.

In addition, in cooperation with the Police Department, Department of Public Works, and George Washington University School of Public Health, ADHS initiated a pedestrian safety study. That study was included in Arlington’s Traffic Calming Plan.

For ADHS, a newly created connection with the community is the most important outcome of having implemented *PACE EH*. Not only does the Arlington community now better understand the field of environmental health, but also community members serve as strong advocates for health department programs.

ADVICE FOR FUTURE USERS

Focus groups were not used by ADHS because they are usually time consuming. However, for other communities that have substantial staffing resources, the use of focus groups could be beneficial. Once a list of environmental health issues has been created, the focus groups could be used to narrow down the list and identify the 5-10 greatest environmental health concerns.

PACE EH TOOLS AND MATERIALS USED BY ARLINGTON COUNTY

- A. CEHA Steering Committee
- B. CEHA Survey
- C. *PACE EH* Profile Tools (included in profile)
- D. Action Plans

COMMUNITY ENVIRONMENTAL HEALTH ASSESSMENT STEERING COMMITTEE

Arlington Department of Human Services

The American Nurses Association

Department of Environmental Quality (Northern Virginia Regional Office)

Virginia Environmental Health Association

George Washington University/School of Public Health

Santa Fe Café/Sagebrush Grill

George Washington University/School of Nursing

League of Women Voters

United Way

Department of Public Works

Arlington Health Foundation

Vanguard Services Unlimited (addiction recovery organization)

National Environmental Health Association (local representative)

COMMUNITY ENVIRONMENTAL HEALTH ASSESSMENT

B

The survey is part of an effort by the Arlington Environment Health Assessment Steering Committee to identify the environmental health issues that are most important to the people of Arlington County. Your responses will help Arlington County assess which environmental problems need attention. The survey is anonymous - your name is not required. Thank you for assisting us in this effort.

I. Which of the following environmental health issues has impacted your health the most? Please circle five (5) numbers and underline the item beneath the circled category that particularly concerns you. Examples are given in parenthesis.

<p>1. Possible Disasters</p> <ul style="list-style-type: none"> • Natural (flood, tornado) • Manmade (biological) • Other (specify) 	<p>2. Transportation Accidents</p> <ul style="list-style-type: none"> • Vehicles • Airport • Mass transit • Chemical spills • Biological spills • Other (specify) 	<p>3. Unintentional Injuries</p> <ul style="list-style-type: none"> • Childhood (falling down stairs, playground injury) • Household (electronic shock, ladder) • Recreational (football, swimming injury) • Work related (back injury, eye injury) • Other (specify)
<p>4. Construction (buildings)</p> <ul style="list-style-type: none"> • Bad ventilation • Heating/cooling • Issues concerning permits/certification • Other (specify) 	<p>5. Energy Sources/Lines</p> <ul style="list-style-type: none"> • Gas lines/tanks • Electricity/microwaves • Electromagnetic fields • Others (specify) 	<p>6. Noise</p> <ul style="list-style-type: none"> • Airport • Construction • Traffic • Starlings • Other (specify)
<p>7. Outdoor Air Pollution</p> <ul style="list-style-type: none"> • Ozone (an air pollutant common in city air that can aggravate asthma) • Incinerators (chemicals emitted in the air during burning of garbage) • Carbon monoxide (component of automobile exhaust) • Vehicle exhaust • Particulate matter (small particles that occur in vehicle exhaust, incinerator emissions, smoke from wood fires) • Other (specify) 	<p>8. Indoor Air Pollution</p> <ul style="list-style-type: none"> • Radon (a naturally occurring radioactive gas) • Carbon monoxide (produced by gas furnace and gas stoves) • Furnishings (may emit gases in the air) • Particulate problems (from cigarette smoking or wood stoves) • Legionnaire's disease (a bacterial disease that survives in hot water systems, air conditioning, humidifiers) • Other (specify) 	<p>9. Commercially Used Hazardous Materials</p> <ul style="list-style-type: none"> • Cleaning products • Batteries (many contain lead) • Printing & photographic materials • Other (specify)

II. What areas do you wish you had more information about?

III. Are there any environmental health conditions in your immediate neighborhood that you feel may be contributing to any family illness? YES / NO / DO NOT KNOW (Please circle one) If yes, what?

IV. Is there anything at your work place that you feel may be harming your health? YES / NO / DO NOT KNOW (Please circle one) If yes, what?

V. Are there any environmental conditions in Arlington which you feel need immediate attention? YES/ NO / DO NOT KNOW (Please circle one) If yes, what?

VI. Do you feel your home is environmentally safe? YES / NO / DO NOT KNOW (Please circle one) If no, what issue bother you?

VII. Do you avoid outdoor recreation areas because you feel they are environmentally unsafe? YES / NO / DO NOT KNOW (Please circle one) If yes, what?

Optional information - check the item that most closely fits you

(1) Age? Less than 25 _____ Age 25 to 44 _____ Age 45-64 _____ Older than 64 _____

(2) Gender? Male _____ Female _____

(3) Education Level? Less than High School _____ High School Diploma/GED _____
Attend College/Technical School _____ College/Technical School Diploma _____
Graduate School _____

(4) What zip code do you live in? _____

ARLINGTON COUNTY COMMUNITY ENVIRONMENTAL HEALTH CONCERN #1: OUTDOOR AIR POLLUTION

D

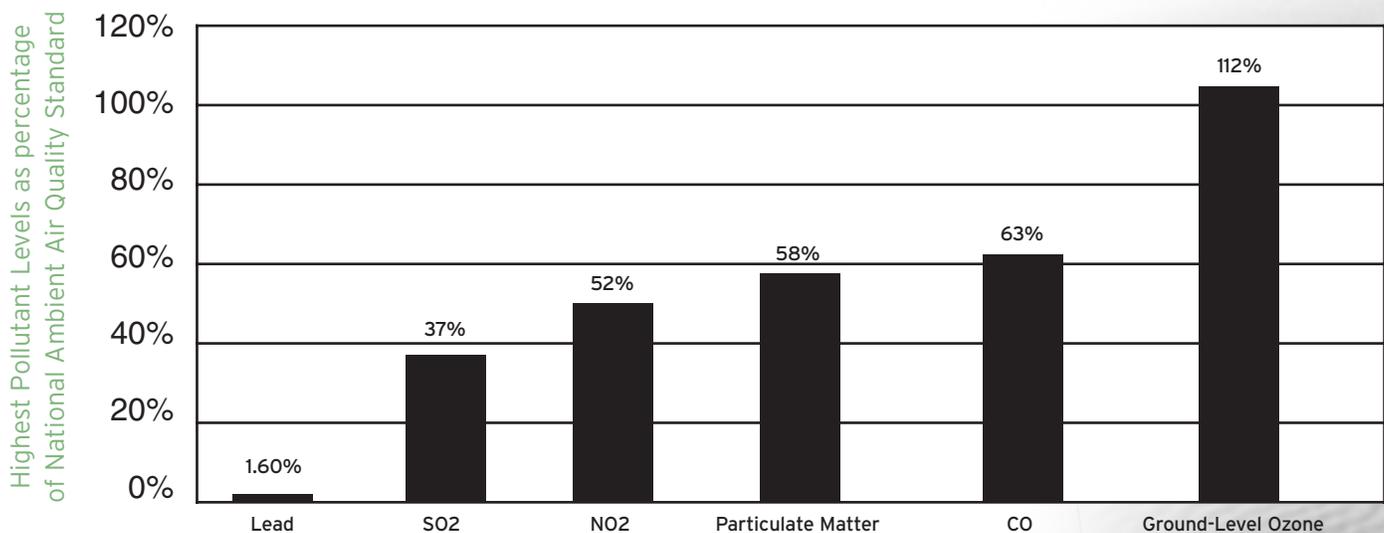
REASONS FOR CONCERN

- Outdoor air pollution is associated with increased rates of asthma and other lung diseases; children and the elderly are particularly susceptible.
- Arlington County has been out of compliance with US EPA's air quality standards.
- Survey respondents identified outdoor air pollution as their number one area of concern. Comments included concerns about the impact of traffic traveling through Arlington on outdoor air quality and an interest in receiving information about actions that contribute to destruction of the ozone layer.

CURRENT SITUATION IN ARLINGTON

Outdoor air pollution is created by motor vehicle exhaust, airplane exhaust, burning coal to generate electricity, trash incineration, local small industries such as dry cleaners, burning wood in home fireplaces, and using outdoor barbecues. The six primary components of outdoor air pollution¹ are regulated by the US EPA, which has established air quality standards that are set to protect human health. Of the six standards, Arlington and the rest of the metropolitan Washington, DC area regularly in compliance with five; that is, the concentrations of the five pollutants in Arlington air are even lower than the concentrations known to be below those associated with ill health. The Washington, DC region generally exceeds the air quality standard for ground level ozone.

COMPARISON OF AIR QUALITY IN METROPOLITAN WASHINGTON AREA TO FEDERAL HEALTH STANDARDS 1996



NAAQS=National Air Quality Standard=100% (New standard is 0.85 beginning 1998)
Source: Metropolitan Washington Council of Government (1997) Air Quality Trends in the Washington Metropolitan Area 1985-1996

FIGURE I

Figure I shows how pollutant concentrations in metropolitan Washington, DC compared to the US EPA's air quality standards in 1996. In all cases except ozone, the *highest* pollutant levels reported were well below the standards. The highest level of ozone reported exceeded the standard by only 12%. The ozone standard has recently been lowered, however. Ozone levels are decreasing and since 1987, have decreased by about 10%.

¹Ground level ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, particulate matter, and lead.

PUBLIC HEALTH IMPACT

Whether outdoor air pollution is having an impact on public health in Arlington is difficult to determine. High levels of the primary pollutant of concern-ozone-have been shown to make it more difficult for people who have asthma to breathe. High levels of ozone can also make it more difficult for people who are exercising or for elderly people to breathe. The rate of asthma cases reported at hospitals in Arlington is much lower than that reported in nearby Virginia communities or in the state as a whole. However, many Arlington residents are likely to go to hospitals in Washington, DC instead of in Arlington and would not be counted. As a result, we don't really know if asthma rates in Arlington are better or worse than in places with lower ozone levels.

Different exposures contribute to lung disease. For example, many scientists believe that indoor air pollution at home and in the workplace is an important cause of lung disease. Smoking is also an important cause of lung disease. It is difficult to separate the health effects of outdoor air pollution, smoking, and indoor air pollution.

INFORMATION NEEDS

There are many chemical pollutants in outdoor air in addition to the six primary pollutants regulated by the US EPA. Recognizing this, the agency has recently proposed a new strategy for regulating sources of the complex mixture of pollutants in urban air. Information is needed on the identities and levels of other pollutants in Arlington air and on their cumulative health effects. Despite the very successful efforts that have been made to reduce air pollution over the last 25 years, there is little information available on the impact that tremendous effort has had on public health. There is a need for the kinds of information that would allow scientists to make better connections between environmental chemical exposures and public health outcomes.

THE ARLINGTON COUNTY COMMUNITY'S ROLE

There are a number of actions that Arlington County residents and businesses can take to help reduce ozone in particular and outdoor air pollution in general. These include:

- Developing regional strategies that will promote decreased use of cars and increased use of HOV lanes and public transportation.
- Investing in alternatively fueled buses and other community vehicles.
- Avoiding the use of outdoor barbecue grills on summer days when ozone levels are high.
- Actively supporting regional air quality improvement plans.
- Reviewing lists of recommendations developed by regional air quality improvement plans and identifying recommendations that could be used in Arlington.
- Investigating the need for monitoring other chemicals that contribute to outdoor air pollution.
- Focusing on individual behavior through support for the End Zone campaign.
- Involving business in outreach.
- Proposing that Metro consider offering free rides on high ozone days.
- Educating the public about improvements made in controlling outdoor air pollution.
- Encouraging employers to allow alternatives to commuting to work on code red days.
- Involving pediatricians and pulmonologists in efforts to reduce the effect of outdoor air pollution on health.
- Involving school administrators in efforts to reduce outdoor

ARLINGTON COUNTY COMMUNITY ENVIRONMENTAL HEALTH CONCERN #2: TRANSPORTATION ACCIDENTS

REASONS FOR CONCERN

- Motor vehicle crashes are the leading cause of death for Americans 1 to 24 years of age.
- Motor vehicle crashes are the leading cause of death for children 6 through 14 years of age.
- In 1996, nearly 21 percent of the children under 15 years of age killed in motor vehicle crashes were killed in alcohol-related crashes.
- Motor vehicle crashes account for 44 percent of U.S. spinal cord injuries.
- Forty-two percent of all motorcyclists involved in fatal crashes were speeding, nearly twice the rate of drivers of passenger cars or light trucks. The percentage of alcohol involvement was 50 percent higher for motorcyclists than for drivers of passenger vehicles. One out of five motorcyclists (20%) involved in fatal crashes in the U.S. in 1996 were operating the vehicle with an invalid license.
- In Virginia 4.1 percent of all traffic fatalities are motorcyclist fatalities (5.2% for U.S.). In Virginia there are 6.0 motorcyclist fatalities per 10,000 registered vehicles (6.0 per 10,000 registered vehicles for U.S.²).
- Transportation accidents was the second most frequently stated area of concern by survey participants. Within the transportation accident category, vehicular accidents was the major concern, with chemical spills listed as the second identified concern. Comments included concern about increased aggressive driving habits and the potential for airline accidents from Reagan National Airport, especially as flights are increased.

CURRENT SITUATION IN ARLINGTON

For Virginia, motor vehicle injuries are the leading cause of hospital admissions among younger adults, 12 to 24 years of age. Compared with the U.S. and the State of Virginia, Northern Virginia has a lower rate of death from motor vehicle accidents. However death rates do not provide a complete picture of the cost of transportation injuries. There is currently a lack of local data on the total number and nature of serious injuries resulting from transportation accidents.

PUBLIC HEALTH IMPACT

The U.S. Department of Health and Human Services, Healthy People Year 2000 Objective for the Nation for motor vehicle deaths is 16.8 deaths per 100,000 age adjusted population. The proposed Year 2010 Objectives are:

- To reduce deaths caused by motor vehicle crashes to no more than 11.4 per 100,000 people and 1.1 per 100 million vehicle miles traveled.
- To reduce pedestrian deaths to no more than 1.7 per 100,000 people
- To reduce pedestrian injuries to no more than 26 per 100,000 people
- To reduce nonfatal injuries caused by motor vehicles to 953 per 100,000 people and 102 per 100 million vehicle miles traveled.

²U.S. Department of Transportation, National Highway Traffic Safety Administration, Traffic Safety Facts 1996.

Among a majority of pedalcyclists (bicycles and tricycles) killed, the most serious injuries are head injuries. Death rates from head injuries are twice as high among cyclists in states with no helmet laws or laws that apply to only young riders, compared with states where laws apply to all riders.³

THE ARLINGTON COUNTY COMMUNITY'S ROLE

There are a number of actions that Arlington County residents and businesses can take to prevent transportation accidents and decrease the severity of injuries. These include:

- Supporting graduated licensing laws for young drivers. These laws require young drivers to "graduate" through phases of restricted driving before they are allowed to get their unrestricted licenses. Restrictions include a mandatory supervised driving period, night driving curfews, limits to teen passengers riding with a beginning driver, and a lower blood alcohol concentration level for teens than for adults.
- Supporting mandated helmet use for motorcyclists and bicyclists.
- Providing helmets for bicycling at no charge to children and youth in need.
- Offering community education programs about use of helmets, appropriate use of child safety restraints, consequences of drinking and driving
- Supporting regionally connected bike trails
- Supporting funding for treatment for alcohol abuse (insurance coverage as well as public support)
- Informing the public of events staged to practice quick response to transportation emergencies and adequate communication about the emergency and precautions the public should take.
- Responding to gaps in data by establishing a system that will support collection and analysis of timely and accurate local data in the areas such as:
 - Children's injuries related to auto accidents
 - Children's injuries related to bicycle accidents
 - Pedestrian accidents
- Investigating the need for and influence of changes in legislation that will require driver's license testing of older adults more frequently.
- Informing the public about activities they can take to decrease accidents
- Identifying and recommending enforcement of traffic rules proven to reduce accidents.
- Enforcing requirements for helmets, seat belts, and safety seats.
- Increasing awareness of the relationship of alcohol to driving.
- Developing campaigns to increase awareness about pedestrians' responsibilities for avoiding transportation accidents
- Developing campaigns to increase awareness about bicycle riders' responsibilities for avoiding transportation accidents.

³Kraus, K.F., Black, M.A., Hessel, N. et al. (1984) The incidence of acute brain injury and serious impairment in a defined population. *American Journal of Epidemiology*, 119, 186-201

ARLINGTON COUNTY COMMUNITY ENVIRONMENTAL HEALTH CONCERN #3: FOOD SANITATION

REASONS FOR CONCERN

- Foodborne illnesses in the U.S. are widespread and costly. GAO⁴ reported that up to 81 million cases of foodborne illnesses and as many as 91,000 deaths from foodborne illnesses occur each year.
- The U.S. Department of Agriculture's Economic Research Service reports that the costs for medical treatment and productivity losses associated with these illnesses and deaths range from \$6.6 billion to 37.1 billion.
- Emergence of newly discovered pathogens such as E.COLI0157:H7 and cyclospora.
- Food sanitation was the fourth most frequently listed area of concern by survey respondents. Individual comments indicated that individuals wanted more information about the results of food inspections and information about criteria used to assess food safety.

CURRENT SITUATIONS IN ARLINGTON

The scientific data suggest that indicators such as the prevalence of diseases associated with food are no higher in Northern Virginia or in Arlington County than for the state or the U.S.

PUBLIC HEALTH IMPACT

Scientific data indicates that the system for protecting public health from the hazards involved with food production, storage and transportation is functioning appropriately. However, it is worth noting that the reporting of food borne illness may not be well established. It has been suggested by the United States Public Health Service (USPHS) that as few as only 10% of the foodborne illnesses in this country are reported to state health departments. The Council for Agricultural Science and Technology estimated that in the United States 6.5 to 33 million people become ill from microorganisms in food, resulting in as many as 9,000 deaths every year. An annual cost of foodborne illness in terms of pain and suffering, reduced productivity and medical cost is estimated between 10 to 83 billion dollars⁵.

THE ARLINGTON COUNTY COMMUNITY'S ROLE

There are a number of actions that Arlington County residents and businesses can take to reduce the risk of foodborne illness. These include:

- Supporting the Northern Virginia Alliance for Safe Food (NVAASF). The NVAASF is a regional alliance of public and private partners. Its goal is to educate the public and industry to food sanitation principals. Each quarter a specific topic is included for an educational campaign. Future topics include: hand washing, proper cooling of potentially hazardous foods, hazards involved with eating raw or partially cooked foods of animal origin, and time and temperature as a method of controlling foodborne illness.
- Working with schools to educate school age children about food protection.
- Working with civic groups to educate general public about food protection.

⁴Government Accounting Office (1996). Food Safety: Information on Foodborne Illnesses, GAO/RCED-96-96, May 8, 1996.

⁵USPHS/FDA (1997). Food Code, Government Printing Office.

ARLINGTON COUNTY COMMUNITY ENVIRONMENTAL HEALTH CONCERN #4: DISEASE CARRIERS

REASONS FOR CONCERN

- Disease Carriers present a potential health hazard to Arlington County.
- Rats can transmit serious diseases to humans and domestic animals, including rate bite fever, murine typhus, leptospirosis and trichinosis.
- Rabies is spread through wild vectors of the disease. A primary pathway of indirect exposure to raccoon rabies may be from pets that have been infected from exposure to raccoons.
- Comments from survey respondents indicated a concern that the rat population seems to be increasing in neighborhood areas and a concern with the presence of a feral cat population.

CURRENT SITUATION IN ARLINGTON

Rabies is endemic in raccoons for all of Northern Virginia as well as the District of Columbia and Maryland counties in the metropolitan area. There have been no cases of human rabies in Virginia, but because there is no treatment for the disease after symptoms occur, rabies remains high as a potential threat to human health.

The spread of rabies to human populations may follow the direct route from exposure to raccoons infected with the disease or indirectly from raccoons to other carriers for the disease then to humans. The main reason for concern from the current raccoon rabies epidemic is that the primary infection pathway to humans may be from pets that have been infected from exposure to raccoons.

Pets that have been vaccinated against rabies are immune to the disease. The Animal Welfare League of Arlington estimates that approximately 70% of dogs and 40% of cats have been vaccinated against rabies. Efforts to raise the number of cats vaccinated such as passing laws to require cat vaccination have not been as effective as efforts that have been used to increase dog vaccination rates.

According to CDC estimates, rat populations in Arlington County may be in excess of 280,000 rats. Although there are many laws that deal with the control and eradication of rats and rat harborage, the enforcement of these laws are spread over as many as five different state and local agencies. Because of this fragmentation there are gaps in enforcement, which has led to increases in rat populations.

PUBLIC HEALTH IMPACT

Although there have been no human rabies in Arlington County in over 50 years, rabies remains a life threatening disease if prompted post exposure vaccination is not administered. Educational efforts by the local health department has made most people aware of the hazards involved with exposure to saliva from rabies carriers; however, each year at least 10 persons are forced to take anti rabies vaccination due to accidental exposure.

Rabies, unlike many other diseases, is almost always fatal once symptoms appear; however, post exposure vaccination is almost always successful, provided treatment is started promptly after

the exposure. The greatest threat to humans is posed from exposure to unvaccinated pets that contract the disease from wild carriers. Unvaccinated dogs and cats may appear healthy but be shedding the disease. In these cases even incidental exposure, such as a dog licking ones face or a scratch from a cast may be sufficient to spread the disease. These types of incidental exposures most always go untreated and not reposted. Thus vaccination of pets remains the primary control of the disease.

Although there have been few diseases associated with rats reported to the State Health Department, public health is most likely affected by the presence of rats in a community. Not only do rats physically spread disease they are potential carriers of disease that can be spread directly or indirectly through their ecto-parasites such as fleas and lice. Rats survive best when there is an abundance of food, water and shelter. Food and water are often supplied from garbage and other human waste, and shelter is often supplied from dilapidated dwellings or structures or unkept premises.

INFORMATION NEEDS

Estimates of number of cats and dogs in the county are approximations. It is difficult to measure the success of vaccination programs if these numbers are not known. Dog population estimates may be more reliable because of the requirement of licensing dogs. A requirement for cat licensing would probably increase reliability of these estimates.

Currently Arlington Environmental Health only conducts routine inspections for rat harborage in areas where commercial establishments abut residential areas. There is a lack of information about the extent of rat harborage in other areas of Arlington County. Figure 4 demonstrates rat harborage in commercial areas.

Because the role of rats as vectors of reportable disease is not clearly known, linking rat harborage with increases in salmonella or other diseases is difficult. All would agree that the reduction of rat harborage thus the reduction of rats would have a positive affect on public health in Arlington County; however, there is no data supporting the theory that a reduction in rat populations will reduce the rate of reportable communicable diseases such as salmonellosis.

THE ARLINGTON COUNTY COMMUNITY'S ROLE

There are a number of actions that Arlington County residents and businesses can take to reduce the risk of foodborne illness. These include:

- Educating the public to the prevention of rabies.
- Increasing the number of vaccinated pets.
- Recommending cat licensing as a method of increase cat vaccination against rabies.
- Eliminating the feral cat population.
- Increasing public awareness about factors that increase rat populations.
- Recommending a coordinated effort from county agencies to minimize rat harborage.

DEMOGRAPHICS

The Barren River District Health Department (BRHD) serves an eight-county area in south-central Kentucky. Although primarily rural, this district is one of the fastest growing areas in the state. Of its 225,669 residents, approximately 40% (92,522) live in the more urban Warren County, with just under 50,000 populating Bowling Green, the county seat.

Within the seven rural counties the population density averages 49 persons per square mile and the populations range between 10,000–38,000 persons. The eighth, Warren County, has the highest population density, at about 170 people per square mile. As the economic, commercial, educational, and cultural center of the region, Bowling Green is unusually cosmopolitan for Kentucky. Its residents include a relatively large foreign-born population of about 3,000 Hispanic immigrants and 3,000 additional refugees and immigrants from Southeast Asia and Eastern European countries. Warren County is home to over half of the district's 20,717 non-white residents. Overall, the non-white population of the other seven counties is only 6%.

The Barren River District's economy centers mostly on Bowling Green and the suburbs of Nashville, TN. Portions of the district have topographic and infrastructure limitations that have substantially impeded economic development. Warren County's 1999 per capita income was \$24,401, slightly above the state average of \$23,227. For the other seven counties, however, the per capita income averaged only \$17,907, well below the state average and \$10,000 below the U.S. national average. The wide range in economic status across the district is evidenced in 1995 poverty level statistics. In the rural Simpson County, only 12.9% of residents were living below the federal poverty level, but 24% of Metcalfe County and 25% of Hart County residents had incomes below this level.

Agriculture remains a top source of income. Chief products include beef cattle, hay, soybeans, and tobacco. Other major sources of income are services, retail trade, and manufacturing (e.g., automotive, clothing, printing/publishing, and aluminum products). Tourism is rapidly becoming an important component of the economy. State and local government and the school systems are major employers in the more rural counties. Current developments in agriculture primarily result from the influx of corporate animal farming under contract for intensive poultry and pig production and from efforts to diversify from heavy dependence on tobacco to alternative farm income sources (e.g., food crops and aquaculture).

UNIQUE TOPOGRAPHY

South-central Kentucky is characterized by the rolling hills of karst topography. The bedrock, comprised mostly of limestone and dolomite, is riddled throughout by cracks and open channels formed where the minerals were dissolved by running water over several thousand years. The most famous tourist attraction, Mammoth Cave, is the largest example of the area's karst formations. Surprisingly, despite abundant rainfall (about 47" per year), surface streams and lakes are scarce; instead, rivers and streams are located primarily underground. Once in the cave network, water moves very rapidly from one place to another. In most areas of the United States, the migration of groundwater is measured in terms of inches per year. In south-central Kentucky, it is measured in feet per hour or miles per day.

**FOR MORE BARREN RIVER DISTRICT HEALTH DEPARTMENT
INFORMATION: (270) 781-8039**

These karst formations create for this area a fragile situation in terms of groundwater quality. Rainfall often flows straight down through the many bedrock crevices into streams located below the surface rather than slowly filtering through soil. Unfortunately, contaminants from agricultural processes, human waste, roadways, and other sources also flow straight down with it. These unfiltered contaminants are then transferred quickly over a wide area via the underground streams. Sinkhole collapses are quite common and are a part of a complex cycle of soil erosion that clogs natural drainage ways. This lack of stability significantly affects land use and efforts to prevent rapid groundwater runoff.

Because streams run underground and are invisible to members of the community, rural residents largely remain unaware of the implications of water pollution. Few local residents realize how easily untreated waste from household and community sources can quickly move into the water supply. Therefore, educating area residents about the importance of monitoring on-site sewage disposal systems remains one of BRHD's greatest challenges.

BARREN RIVER DISTRICT HEALTH DEPARTMENT

BRHD serves its eight member counties through health centers located in each county and a district office in Bowling Green. At the time BRHD undertook the *PACE EH* process, the staff total was 247 employees, including 19 full-time environmental health specialists. A 25-member District Board of Health governs the agency and directly employs the staff. BRHD has much autonomy in developing and delivering local health department operations.

BRHD's funding comes from a mix of state/federal grants, local government allocations, and third-party insurance allocations. At the time the *PACE EH* process was undertaken, BRHD projected an operating budget of \$9.4 million, with just under \$1 million earmarked for "environmental services." State statutes dictate most environmental services, specifying responsibility for monitoring compliance with many public-health laws. Approximately 75% of environmental staff members' time is dedicated to on-site sewage system monitoring and retail food establishment inspections.

THE PACE EH PROCESS

When the *PACE EH* pilot project began, BRHD had completed, or was in the middle of, *APEXPH* (Assessment Protocol for Excellence in Public Health), an assessment methodology designed to enhance the organizational capacity and leadership capability of local health agencies, in four member counties. Because *APEXPH* was being conducted separately in individual counties, the decision was made to conduct the *PACE EH* environmental assessment for the district as a whole.

THE BARREN RIVER CEHA TEAM

Community-based environmental health assessment (CEHA) team members were selected by staff members, with some outside recommendations. The 23 member "seats" represented each local county government, two cities, five planning commissions, several local environmental agencies, and Western Kentucky University. At least two members were selected from each county. Membership varied within several areas of environmental and health expertise. Some members were chosen for their expertise in community issues and/or economic development, rather than for their technical knowledge. One member was designated as a Board of Health representative. After each designee agreed to serve, the District Board of Health officially appointed the entire team of 23 members as the Barren River Environmental Health Leadership Team (EHLT). The EHLT adopted by-laws, with members required to serve a 3-year appointment.

The entire team met quarterly, with a goal of holding monthly meetings for individual work groups. The EHLT formed the following three technical work groups, divided by area of expertise and/or issue interest: water, air, and land. A fourth work group was established to gather public input. Other interested citizens were invited to fill out the work groups, with full participation rights and responsibilities. Work-group members contributed as their time and interest permitted.

BRHD provided meals for each quarterly meeting of the full EHLT and meals for work groups about once per quarter. Other times, work groups (which usually met at lunch or breakfast time) had “brown bag” meals. Sometimes they met at a restaurant. Sharing a meal helped keep the meeting less formal and helped with attendance for people who could more easily attend a meeting during lunch hour.

GENERATING AN ENVIRONMENTAL HEALTH ISSUE LIST

The EHLT developed an environmental health issue list during its first meeting and roughly divided it among technical work groups (i.e., air, land, and water groups). Later, the work groups added a few additional issues. Work groups were asked to gather data, define/limit the issues, and develop indicators. During work-group meetings, various members chose one or more issues to research and report upon, usually an issue for which they had expertise. If no one had expertise in an area, one member would recruit a local expert and asked him or her to attend a meeting and educate the group (an effective means for recruiting new work-group members). For each issue, reporting volunteers were asked to provide standard basic information, including human health effects, causes/contributors, pathways, and current public health protection factors. They were also asked, “For this issue, what are the various ways to measure the status and impact on human health? Of these measurements (indicators), choose the one or two most useful or meaningful to our community.”

DEVELOPING INDICATORS

For each issue, all possible measurements were organized in a simple worksheet. They were designated to either the longer “B” list of indicators or the shorter (most useful or meaningful) “A” list of core indicators. Designation to the “A” or “B” list was based on recommendation of the work-group member who reported on the issue and was discussed by the entire work group. Most often, measurements were included on the “A” list of indicators only if the data were being collected and made available to the team.

When data were judged important for community assessment but were not (to the work group’s knowledge) being collected locally, that measurement was added to the EHLT’s “data wish list.” Over time, the goal is to circulate this wish list widely among local planners, politicians, and environmental health professionals (among others) to encourage/inspire someone to begin collecting the data. In summary, three lists were created: an “A” list of core environmental health indicators that are most meaningful, a larger “B” list of other useful indicators, and a data wish list of indicators the team considers important.

This call for data draws attention to the importance of a potential data-collection effort by researchers or organizations that have data-collection capabilities. Even university or high school students can undertake projects to collect data if the need is communicated to them. In a funding proposal, local applicants can cite the EHLT as justification for the community’s need for specific environmental health data. Sometimes an EHLT work plan was developed to promote and/or facilitate actual collection of data for an indicator.

The difficulty of identifying local environmental health data and the challenge of choosing the most valuable indicators led to a joint project between BRHD and the Northern KY Independent District Health Department (another *PACE EH* Pilot Site). Environmental health and public health experts from across the state met several times over 18 months to develop a list of recommended indicators for local Kentucky communities. One important goal for this project was to draw attention to the need for data on the local level.

SELECTING STANDARDS

Relevant national or state standards were identified and presented simultaneously with discussions focusing on indicator development. Existing standards were evaluated based on their perceived suitability for the local area. EHLT did not initiate a program to develop alternate local standards.

SURVEYING THE COMMUNITY

The purpose of the informal community survey was to gather input for prioritizing issues. The public input work group developed a simple survey tool that addressed approximately 50 environmental health issues. Respondents were asked to indicate by 0, 1, 2, or 3 whether they considered each environmental health issue to be “not important,” “important,” “very important,” or “at or near a crisis level” within their community. They were also asked to indicate their county of residence. The survey form provided space for writing in additional issues.

EHLT members distributed the survey tool informally to as many people as possible. Some members distributed it when they attended public meetings or gatherings. One member gave out surveys at a county fair and provided a token gift for persons returning it. Results were tallied by using the 0, 1, 2, or 3 responses as points and then totaling the points for each issue. Totals for each issue were also broken down by county to account for variations in response. Staff members were surprised that only a few issues coincided with geographic county lines.

CREATING ISSUE PROFILES

EHLT members and health department staff produced informal issue profiles, but mistakenly chose not to write up formal profiles. Formal issue profiles would have helped the work groups identify local data more efficiently and provide a better vantage from which to explore local standards. EHLT also did not develop a detailed community profile describing sub-populations, economic forces, and resource use. Producing a detailed community profile and tying it to formal issue profiles would help a team identify the way in which groups of residents and community sectors are affected by various environmental health issues. This, in turn, would help the team create action plans.

RANKING AND PRIORITIZING THE ISSUES

The original version of the *PACE EH* guidebook combined these two steps, which caused some confusion as to the distinction between “ranking” and “prioritizing.” BRHD staff members recommend that these two steps be taken in the order presented in the final *PACE EH* guidebook.

It is easy to become overwhelmed by a lengthy list of environmental health issues that covers virtually every aspect of local economy, social circumstances, and personal health. For some issues, BRHD obtained data that were difficult to digest in manageable pieces. Conversely, local data about environmental health issues were often scarce, and clearly established “cause and effect” relationships between the environment and human health status frequently were lacking. The overall result made issue comparison, let alone ranking and prioritizing, difficult.

BRHD staff found that ranking and prioritizing the issues is much easier if local teams simply avoid efforts to achieve near perfect scientific objectivity. Subjectivity is inherent in this process, especially when public input contributes to the validation of data. The most desirable end results are community action -- not perfect ranking and prioritization. By encouraging team members keep this focus, facilitators can help ameliorate high stress levels.

During a quarterly meeting, EHLT developed a list of criteria for prioritizing issues. They divided into ad hoc committees representing ecology, human health, and quality of life. Each was asked to brainstorm criteria. Ad hoc groups used the list of issues EHLT had been studying, which had been narrowed down to 15. All groups reported back and, after discussion, designated a master list of 10 criteria. Using the criteria list, staff developed a worksheet that allowed each issue to be scored separately. EHLT members were even given two spaces for last chance write-in issues. Members were asked to assign scores based on the data that had been presented, their personal expertise, and findings on public concerns. The goal was a numeric value to allow objective comparison among issues.

All scores were totaled for each issue and presented back at a full EHLT meeting, with the 12 highest-scoring issues posted on the wall on flip-chart paper. To shorten this list, each EHLT member was asked to place five sticker dots on the issues they considered most critical to the health of local residents. After counting dots, a final discussion achieved consensus.

EHLT members designated the following issues as high priority for the Barren River region:

- public water supplies;
- “straight pipe” sewage disposal;
- food-supply safety;
- solid-waste disposal; and
- illegal dumping.

The next step was development of issue descriptions for public release (and for public decision-makers). In the future, the team will develop action plans to address these issues and develop recommendations for state and local governments and key public agencies. Some community recommendations, and perhaps action plans, likely will address the need for education on these issues within our schools and for the public at large.

DEVELOPING ACTION PLANS

BRHD’s environmental health assessment process made one significant departure from the *PACE EH* process. Within the first three months, team members gave in to the very common urge by all community assessment groups to “do something about these health problems” (as opposed to delaying action plans for the months it takes to complete an assessment process). This deviation was based on previous experiences with the *APEXPH* protocol: it is very useful to help keep assessment-team members actively involved. Therefore, during the months of issue examination by individual work groups, members also spent some time developing work plans to address certain issues.

The action plans were developed by work group members and not just presented to them for approval. The team also sought action plans that took EHLT member organizations beyond their ordinary experiences. The action-planning step offers an excellent opportunity to bring in new players who might have been overlooked during initial formation of the EHLT. When team members began to explore ways to accomplish change, they often uncovered existing commu-

nity resources (including people) that were previously not recognized as potential partners for addressing environmental issues

ADVICE FOR FUTURE USERS

One of the most important outcomes of implementing *PACE EH* was the establishment and strengthening of relationships between people from each member county. One way to help ensure this outcome was to downplay media coverage and publicity of the EHLT's efforts. If members fear they will be quoted in the media on controversial issues, they may respond by refraining from contributing candidly in open discussions.

Perhaps BRHD's most heated controversies have been over the definition - and limitations - of "environmental health" as opposed to "public health," "community health," "personal health," and "ecology." Different team members brought to the process completely different views and assumptions, which had to be addressed to establish a common frame of reference for the project. Such a common frame of reference supports development of the criteria for issue ranking, the ranking process, and even the development of action plans.

Future users of *PACE EH* may want to formally identify and evaluate subjective indicators (e.g., "well-being of the community") within the project. Despite the difficulties associated with using broad, vaguely defined indicators, they can serve to support the team in maintaining a focus on broad environmental health needs rather than on specific, relatively minute issues. Further, they can inspire the team to consider environmental health actions that center as much on local economic and/or political processes as on specific local environmental health conditions.

Future adapters of *PACE EH* should encourage their individual CEHA team members to define how their involvement in the *PACE EH* process can benefit them personally and professionally. One of the most useful outcomes of a community health assessment process is the personal and professional relationships that are built among team members. Beyond networking, the process can also educate team members about local community services, programs, and activities addressing environmental issues. The knowledge and contacts gained by each team member help them more effectively carry out their regular jobs. Although promoting such a mentality was not a formal goal of the EHLT, acknowledging the benefits of making new contacts for each individual team member helped maintain team commitment and involvement. The EHLT periodically reviewed on an informal basis how the *PACE EH* process and related activities supported the efforts of participating organizations; individual team members who recognized the professional and personal benefits of involvement tended to remain active.

PACE EH TOOLS AND DOCUMENTS USED BY BARREN RIVER DISTRICT HEALTH DEPARTMENT

- A. Environmental Health Leadership Team List
- B. Open-ended Public Input Survey
- C. Health Status Indicators Worksheets (Land and Water)
- D. Environmental Health Issues Priority Survey
- E. Environmental Health Issues Priority Survey Worksheet
- F. Criteria Worksheet for Prioritizing Environmental Health (EH) Issues
- G. Project Work Plan (UVB Exposure)

ENVIRONMENTAL HEALTH LEADERSHIP TEAM

A

B A R R E N R I V E R , K Y

Kentucky Department of Environmental Protection - Water

City-County Planning Commission

Glasgow-Barren County Planning & Zoning

Western Kentucky University

Mammoth Cave National Park

Metcalfe County Judge Executive

Kentucky Department of Environmental Protection - Waste Management

Edmonson Tourist Commission

Daily News

Kentucky Waterways Alliance/Hart Planning & Zoning

Hart County Judge Executive

Resource Conservation and Development/Natural Resources Conservation Service
(both are state versions of USDA programs)

Barren River Area Development District

Barren River Health Department

Warren County Health Department

B BARREN RIVER ENVIRONMENTAL HEALTH LEADERSHIP TEAM

PUBLIC INPUT SURVEY

1. Please tell us 4 or 5 things that south central Kentucky has to offer as a place to live.

2. Which aspects of life in this area are most important to be maintained for future generations?

3. Think for a moment about environmental factors which can affect our health (spread of disease, toxic exposure, injury, cancer-causing chemicals, etc.). Which environmental conditions pose the greatest threat to our health and quality of life in south central Kentucky?

a. Which environmental conditions or problems are most likely to affect the health of future generations?

b. Which environmental conditions or problems are most likely to affect the quality of life for future generations?

In general do you feel that these are safe?

- | | | |
|----------------------------------|-----|----|
| a. your water supply | yes | no |
| b. your food supply | yes | no |
| c. outdoor air | yes | no |
| d. indoor air | yes | no |
| e. work environment | yes | no |
| f. schools and public facilities | yes | no |

Please feel free to make comments here:

**BARREN ENVIRONMENTAL HEALTH LEADERSHIP TEAM
HEALTH STATUS INDICATORS - "LAND" WORK GROUP**

"A" LIST MOST MEANINGFUL INDICATORS		"B" LIST OTHER IMPORTANT INDICATORS	
<p>SOLID WASTE DISPOSAL -</p> <p>1) Total # tons of solid waste disposal in landfills, compared to total # tons recycled.</p>	<p>1) The % of households having available a public or private pick-up service for composting biodegradables such as yard waste.</p> <p>2) The % of recycling facilities that are capable of recycling at least five different types of materials: paper, cardboard, aluminum, glass, cans, or plastics.</p> <p>3) The % of vehicles recycled in permitted scrap yards vs. the number of vehicles removed from property tax rolls.</p>		
<p>ILLEGAL DUMPING -</p> <p>1) Number of open dumps currently being used</p> <p>2) Number of households using a commercial or municipal waste collection system.</p>	<p>1) Incidents of flooding due to plugged sinkholes.</p> <p>2) The number of vehicle tire dumps with > 100 tires.</p> <p>3) The number of illegal dumps which are located in high-priority areas (sinkholes, creek beds, etc.)</p>		
<p>SOIL EROSION -</p> <p>1) Tons of sediment in streams, average per year.</p>	<p>1) Total # of no-till acres compared to # of conventionally tilled acres.</p>		
<p>UNDERGROUND STORAGE TANKS -</p> <p>1) Number of underground storage tanks that are "exempt" from EPA permit regulations.</p>	<p align="center"><i>Still "under construction".</i></p>		
<p>VECTOR-BORNE DISEASES -</p> <p>1) Total case rate for "reportable" vector-borne diseases.</p>	<p>1) Total death rates for "reportable" vector-borne diseases.</p> <p>2) Individual case rates for:</p> <ul style="list-style-type: none"> * Malaria * Rabies * Hanta Virus * Lyme Disease * Histoplasmosis * Rocky Mt. Spotted Fever * Yellow fever * Encephalitis * Plague * Erlichiosis 		
<p>FOOD SUPPLY SAFETY -</p> <p>1) Total case rates for "reportable" food-borne illness.</p>	<p>1) Individual case rates for "reportable" food-borne illnesses:</p> <ul style="list-style-type: none"> E. Coli Shigella Botulism Campylobacteria Salmonella <p>2) Percentage of food handlers and managers who have up-to-date certification training.</p> <p>3) The percentage of food service establishments with one or more "critical" violations on most recent Health Dept. inspection.</p>		

Other issues explored by the work group included bio-diversity, industrial contamination of soil, and agricultural contamination of soil.

BARREN ENVIRONMENTAL HEALTH LEADERSHIP TEAM
HEALTH STATUS INDICATORS - "WATER" WORK GROUP

"A" LIST MOST MEANINGFUL INDICATORS	"B" LIST OTHER IMPORTANT INDICATORS
<p>DISPOSAL OF WASTE WATER (Human Sewage)</p> <ol style="list-style-type: none"> The percentage of households & commercial facilities using a "straight pipe" for sewage disposal. The % of households and commercial facilities on a municipal sewage system. 	<ol style="list-style-type: none"> The % or # of on-site sewage disposal systems that are > 25 years old. The % or # of on-site sewage disposal systems that are failing. The % or # of households using a package treatment system for disposal. The number of BRADD counties with a Water Supply Plan in place. Case rates for gastroenteritis. (may be moved to "A" list.) Hospital Emergency room admissions for diarrhea and/or other gastroenteritis illnesses.
<p>PUBLIC DRINKING WATER SOURCES - a "public" water supply serves 25 or more people, or 15 connections.</p> <ol style="list-style-type: none"> The % of water treatment plants with Maximum Contamination Level (MCL) violations. 	<ol style="list-style-type: none"> The % of water treatment plants that are testing source water prior to treatment for: <ul style="list-style-type: none"> * cryptosporidium * trihaloacetic acids * total organic carbon * pesticides & herbicides within the atrazine family; triazines & acetanilid The % of water treatment plants with reporting violations.
<p>PRIVATE DRINKING WATER SOURCES -</p> <ol style="list-style-type: none"> The % of private wells tested that are found to be contaminated with nitrates. The % of private wells tested that are found to have a total coliform level above state standards. 	<ol style="list-style-type: none"> The % of households using a private source that are routinely requesting water quality testing by the BRHD or the CNREPI. The % of households using a private water source. The % of well drillers who perform initial testing. The % of commercial dairy farmers who must pre-treat private water sources prior to use in dairy operations.

LAND WORK GROUP - DATA "WISH LIST"

1. Inventory of recycling programs and any additional recycling gaps.
2. Estimate of total tons of recyclable materials being produced as waste, by recyclable type.
3. Number and location of open dumps per county - percent that are in high priority locations such as sinkholes, creek beds, etc.
4. Number and location of "exempt" underground storage tanks, both active and inactive.
5. Number of dairy operations having to treat their water source for contamination before use in their dairy operation.
6. Timely, documented counts of "reportable" diseases.
7. Number of tons of biodegradable material recycled per year through permitted composting facilities (sludge, yard waste, etc.)
8. Number of vehicles removed from property tax roles compared to number of vehicles recycled through scrap yards or junk yards.
9. Number of incidents per county of flooding related to plugged sinkholes.

WATER WORK GROUP - DATA "WISH LIST"

1. The number and location of active oil wells.
2. Soil layers throughout the 10-county BRADD district.
3. Under "Disposal of Waste Water" above, #s one and two under the "A" list. Also # one under the "B" list - an inventory of systems installed since 7/15/82 is available on paper, but not as an electronic database. The #/location of systems installed prior to that date is unknown outside of the U.S. Census, which caught only a sample.
4. Under Public Drinking Water Sources above, # one in the "B" list.

D

ENVIRONMENTAL HEALTH ISSUES PRIORITY SURVEY FOR THE BARREN RIVER ENVIRONMENTAL HEALTH LEADERSHIP TEAM

Please lend your personal knowledge of problems affecting the health of our region. Write a number 1 – 3 in the blank beside each health problem listed, indicating how important or serious this problem is within the county. Your priority ranking for each problem should be based on your experiences and perceptions. If we have left out one or more problems or issues that are of concern to you, please write them in and include a ranking score.

RANKING CATEGORIES:

- 1 = Minor Problem in our area 3 = At or Close to a Crisis Level in our area
 2 = Major Problem in our area ? = I'm Not Sure

<u>RANK</u>	<u>PROBLEM</u>	<u>COMMENT</u>
___	Accidental Injuries - children	
___	Accidental Injuries - elderly	
___	Accidental injuries - motor vehicle crashes	
___	Asbestos Exposure	
___	Communicable Diseases (typhoid, flu, meningitis, other_____)	
___	Inadequate Housing	
___	Lead Poisoning	
___	Ozone Depletion	
___	Rabies	
___	Tuberculosis (TB)	
___	Violence in the Home	
___	Violence in the Schools	
___	Worksite Injuries type of injury_____	

Farm injuries:

- | | |
|-------------------------------|-------------------|
| ___ Tractor rollovers | ___ Large Animals |
| ___ Improper use of Chemicals | ___ Other |

ENVIRONMENTAL HEALTH ISSUES PRIORITY SURVEY

Food-borne illness (Food poisoning) from:

- Foods cooked at home
- Foods eaten in a restaurant (including fast food)
- Ready-to-eat foods bought at a store

Indoor Air Quality problems caused by:

- Carbon Monoxide
- Formaldehyde
- Second-hand Smoke
- Other _____

Ambient (outdoor) Air Quality problems caused by:

- Industrial Emissions
- Ozone
- Auto Emissions
- Other _____

Pollution of our Surface or Groundwater due to:

- Failing Septic Systems
- Agricultural Runoff (Pesticides/Fertilizers)
- Illegal Dumping of Garbage
- Animal Wastes

Environmental Problems Affecting Our QUALITY OF LIFE

- Failing Septic Systems
- Commercial Composting
- Illegal Dumping of Garbage
- Animal Production Operations (hogs, poultry, cattle, etc.)
- Lack of Community Planning and land-use zoning

Any Other Environmental Problems We Omitted?

- Other Environmental problem: _____
- Other Environmental problem: _____

Today's Date: _____



ENVIRONMENTAL HEALTH ISSUES PRIORITY SURVEY - WORKSHEET FOR *THE BARREN RIVER E.H.L.T. MEMBERS*

Please help narrow the number of environmental health issues to be included in our Public Input Work Group's survey. Circle a number (1-5) beside each item below to indicate your opinion. Please consider each item separately from any other item on the list.

How "Core" is this EH issue? Remember that most health problems involve a blend of causes and contributing elements, including: Biological Agents, Physical Elements, Human Behaviors, and other factors. Your job here is to decide considering all the various causes and contributors, which are most "core" to your concept of Environmental Health. Please try not to consider the extent to which the EHLT or other local organizations/individuals can affect this environmental health problem. Try to focus on the causes and contributing factors.

	Not "core" at all	Some- what "core"	Very Much "core"		
1	2	3	4	5	Food-borne Illness from: Ready-to-eat foods bought at a store
1	2	3	4	5	Indoor Air Quality problems: Carbon Monoxide
1	2	3	4	5	Indoor Air Quality problems: Formaldehyde
1	2	3	4	5	Indoor Air Quality problems: Second-hand Smoke
1	2	3	4	5	Indoor Air Quality problems: Poor Ventilation
1	2	3	4	5	Ambient (outdoor) Air Quality: Industrial Emissions
1	2	3	4	5	Ambient (outdoor) Air Quality: Ozone
1	2	3	4	5	Ambient (outdoor) Air Quality: Auto Emissions
1	2	3	4	5	Pollution of Groundwater due to Failing Septic Systems
1	2	3	4	5	Pollution of Surface / Groundwater due to Agriculture Runoff
1	2	3	4	5	Pollution of Surface / Groundwater: Illegal Garbage Dumping
1	2	3	4	5	Pollution of our Surface / Groundwater due to Animal Wastes
1	2	3	4	5	Commercial Composting
1	2	3	4	5	Animal Production Operations (hogs, poultry, cattle, etc.)
1	2	3	4	5	Lack of Community Planning and land-use zoning
1	2	3	4	5	Noise pollution
1	2	3	4	5	Lead poisoning
1	2	3	4	5	Mosquito reservoirs and breeding
1	2	3	4	5	Water quality at public beaches, pools, and spas
1	2	3	4	5	Houseboat dumping of waste
1	2	3	4	5	UVB Radiation
1	2	3	4	5	Skin Cancer
1	2	3	4	5	Plugging of sinkholes
1	2	3	4	5	Illegal sewage discharge
1	2	3	4	5	Buffer zones between agricultural & residential zones
1	2	3	4	5	Formaldehyde / sick building syndrome

**Not
"core"
at all** **Some-
what
"core"** **Very
Much
"core"**

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

Indoor Air pollution from cleaning fumes

Burning of trash

Use of straight pipes/no septic system

Communicable diseases associated with sewage

Tire dumps

Adequate landfill sites - Present

Adequate landfill sites - Future

Recycling programs

Other _____

Other _____

CRITERIA WORKSHEET FOR PRIORITIZING ENVIRONMENTAL HEALTH (EH) ISSUES



ISSUE 1: INDOOR AIR QUALITY - includes contamination from carbon monoxide, VOCs, asbestos, lead dust, particulates, pesticides, and tobacco smoke as well as biologicals such as molds/mildews.

- | Lowest | Highest | | | | |
|--------|---------|---|---|---|--|
| 1 | 2 | 3 | 4 | 5 | (Circle one per line) |
| 1 | 2 | 3 | 4 | 5 | Can we control or affect the environmental health issue |
| 1 | 2 | 3 | 4 | 5 | How much value does the community place on this EH issue |
| 1 | 2 | 3 | 4 | 5 | How much does the issue affect our economic well being |
| 1 | 2 | 3 | 4 | 5 | How severe are the effects on human health |
| 1 | 2 | 3 | 4 | 5 | Can the health effects be remediated |
| 1 | 2 | 3 | 4 | 5 | What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether) |
| 1 | 2 | 3 | 4 | 5 | How severe is the impact on the environmental/ecosystem, over the next 10 years |
| 1 | 2 | 3 | 4 | 5 | Are the ecological effects reversible |
| 1 | 2 | 3 | 4 | 5 | Does the issue affect a large number of people within our ADD district |
| 1 | 2 | 3 | 4 | 5 | How intense is the disruption to our senses from the issue |

ISSUE 2: AMBIENT AIR QUALITY - includes elevated levels of ozone and particulates, toxic emissions from industries or businesses.

- | Lowest | Highest | | | | |
|--------|---------|---|---|---|--|
| 1 | 2 | 3 | 4 | 5 | (Circle one per line) |
| 1 | 2 | 3 | 4 | 5 | Can we control or affect the environmental health issue |
| 1 | 2 | 3 | 4 | 5 | How much value does the community place on this EH issue |
| 1 | 2 | 3 | 4 | 5 | How much does the issue affect our economic well being |
| 1 | 2 | 3 | 4 | 5 | How severe are the effects on human health |
| 1 | 2 | 3 | 4 | 5 | Can the health effects be remediated |
| 1 | 2 | 3 | 4 | 5 | What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether) |
| 1 | 2 | 3 | 4 | 5 | How severe is the impact on the environmental/ecosystem, over the next 10 years |
| 1 | 2 | 3 | 4 | 5 | Are the ecological effects reversible |
| 1 | 2 | 3 | 4 | 5 | Does the issue affect a large number of people within our ADD district |
| 1 | 2 | 3 | 4 | 5 | How intense is the disruption to our senses from the issue |

ISSUE 3: RADON

- | Lowest | Highest | | | | |
|--------|---------|---|---|---|--|
| 1 | 2 | 3 | 4 | 5 | (Circle one per line) |
| 1 | 2 | 3 | 4 | 5 | Can we control or affect the environmental health issue |
| 1 | 2 | 3 | 4 | 5 | How much value does the community place on this EH issue |
| 1 | 2 | 3 | 4 | 5 | How much does the issue affect our economic well being |
| 1 | 2 | 3 | 4 | 5 | How severe are the effects on human health |
| 1 | 2 | 3 | 4 | 5 | Can the health effects be remediated |
| 1 | 2 | 3 | 4 | 5 | What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether) |
| 1 | 2 | 3 | 4 | 5 | How severe is the impact on the environmental/ecosystem, over the next 10 years |
| 1 | 2 | 3 | 4 | 5 | Are the ecological effects reversible |
| 1 | 2 | 3 | 4 | 5 | Does the issue affect a large number of people within our ADD district |
| 1 | 2 | 3 | 4 | 5 | How intense is the disruption to our senses from the issue |

ISSUE 4: ULTRAVIOLET "B" RADIATION

- Lowest Highest (Circle one per line)
- 1 2 3 4 5 Can we control or affect the environmental health issue
 - 1 2 3 4 5 How much value does the community place on this EH issue
 - 1 2 3 4 5 How much does the issue affect our economic well being
 - 1 2 3 4 5 How severe are the effects on human health
 - 1 2 3 4 5 Can the health effects be remediated
 - 1 2 3 4 5 What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether)
 - 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
 - 1 2 3 4 5 Are the ecological effects reversible
 - 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
 - 1 2 3 4 5 How intense is the disruption to our senses from the issue

ISSUE 5: SOLID WASTE DISPOSAL- includes lack of landfill space, need for more recycling, and problems associated with landfill adequacy (leaking, expense, etc.)

- Lowest Highest (Circle one per line)
- 1 2 3 4 5 Can we control or affect the environmental health issue
 - 1 2 3 4 5 How much value does the community place on this EH issue
 - 1 2 3 4 5 How much does the issue affect our economic well being
 - 1 2 3 4 5 How severe are the effects on human health
 - 1 2 3 4 5 Can the health effects be remediated
 - 1 2 3 4 5 What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether)
 - 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
 - 1 2 3 4 5 Are the ecological effects reversible
 - 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
 - 1 2 3 4 5 How intense is the disruption to our senses from the issue

ISSUE 6: ILLEGAL DUMPING OF GARBAGE, TIRES, APPLIANCES, MEDICAL WASTE, CHEMICALS, LIQUIDS, ETC.

- Lowest Highest (Circle one per line)
- 1 2 3 4 5 Can we control or affect the environmental health issue
 - 1 2 3 4 5 How much value does the community place on this EH issue
 - 1 2 3 4 5 How much does the issue affect our economic well being
 - 1 2 3 4 5 How severe are the effects on human health
 - 1 2 3 4 5 Can the health effects be remediated
 - 1 2 3 4 5 What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether)
 - 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
 - 1 2 3 4 5 Are the ecological effects reversible
 - 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
 - 1 2 3 4 5 How intense is the disruption to our senses from the issue

ISSUE 7: FOOD SUPPLY SAFETY - includes agricultural practices, food processing/transport, and food service establishments (commercial and public)

- Lowest Highest (Circle one per line)
- 1 2 3 4 5 Can we control or affect the environmental health issue
 - 1 2 3 4 5 How much value does the community place on this EH issue
 - 1 2 3 4 5 How much does the issue affect our economic well being
 - 1 2 3 4 5 How severe are the effects on human health
 - 1 2 3 4 5 Can the health effects be remediated

- 1 2 3 4 5 What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether)
- 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
- 1 2 3 4 5 Are the ecological effects reversible
- 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
- 1 2 3 4 5 How intense is the disruption to our senses from the issue

ISSUE 8: RABIES AND DOMESTIC ANIMAL CONTROL - includes inadequate immunization of pets, the stray/unwanted population, adoption of wild animals as pets, and lack of animal quarantine/control facilities.

- Lowest Highest *(Circle one per line)*
- 1 2 3 4 5 Can we control or affect the environmental health issue
 - 1 2 3 4 5 How much value does the community place on this EH issue
 - 1 2 3 4 5 How much does the issue affect our economic well being
 - 1 2 3 4 5 How severe are the effects on human health
 - 1 2 3 4 5 Can the health effects be remediated
 - 1 2 3 4 5 What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether)
 - 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
 - 1 2 3 4 5 Are the ecological effects reversible
 - 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
 - 1 2 3 4 5 How intense is the disruption to our senses from the issue

ISSUE 9: WILD ANIMAL/VECTOR CONTROL - includes rodents, roaches, mosquitoes, ticks, pigeons, bird roosts, fleas.

- Lowest Highest *(Circle one per line)*
- 1 2 3 4 5 Can we control or affect the environmental health issue
 - 1 2 3 4 5 How much value does the community place on this EH issue
 - 1 2 3 4 5 How much does the issue affect our economic well being
 - 1 2 3 4 5 How severe are the effects on human health
 - 1 2 3 4 5 Can the health effects be remediated
 - 1 2 3 4 5 What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether)
 - 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
 - 1 2 3 4 5 Are the ecological effects reversible
 - 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
 - 1 2 3 4 5 How intense is the disruption to our senses from the issue

ISSUE 10: SOIL EROSION AND EFFECTS ON WATER QUALITY - from agricultural, construction and commercial processes

- Lowest Highest *(Circle one per line)*
- 1 2 3 4 5 Can we control or affect the environmental health issue
 - 1 2 3 4 5 How much value does the community place on this EH issue
 - 1 2 3 4 5 How much does the issue affect our economic well being
 - 1 2 3 4 5 How severe are the effects on human health
 - 1 2 3 4 5 Can the health effects be remediated
 - 1 2 3 4 5 What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether)
 - 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
 - 1 2 3 4 5 Are the ecological effects reversible
 - 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
 - 1 2 3 4 5 How intense is the disruption to our senses from the issue

ISSUE 11: "STRAIGHT PIPE" SEWAGE DISPOSAL - from homes and commercial facilities

- | Lowest | Highest | |
|--------|---------|--|
| 1 | 2 3 4 5 | <i>(Circle one per line)</i> |
| 1 | 2 3 4 5 | Can we control or affect the environmental health issue |
| 1 | 2 3 4 5 | How much value does the community place on this EH issue |
| 1 | 2 3 4 5 | How much does the issue affect our economic well being |
| 1 | 2 3 4 5 | How severe are the effects on human health |
| 1 | 2 3 4 5 | Can the health effects be remediated |
| 1 | 2 3 4 5 | What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether) |
| 1 | 2 3 4 5 | How severe is the impact on the environmental/ecosystem, over the next 10 years |
| 1 | 2 3 4 5 | Are the ecological effects reversible |
| 1 | 2 3 4 5 | Does the issue affect a large number of people within our ADD district |
| 1 | 2 3 4 5 | How intense is the disruption to our senses from the issue |

ISSUE 12: PUBLIC WATER SUPPLIES - includes not enough available in rural areas, contaminants they cannot treat at present, and treatment plants with maximum contaminate level violations

- | Lowest | Highest | |
|--------|---------|--|
| 1 | 2 3 4 5 | <i>(Circle one per line)</i> |
| 1 | 2 3 4 5 | Can we control or affect the environmental health issue |
| 1 | 2 3 4 5 | How much value does the community place on this EH issue |
| 1 | 2 3 4 5 | How much does the issue affect our economic well being |
| 1 | 2 3 4 5 | How severe are the effects on human health |
| 1 | 2 3 4 5 | Can the health effects be remediated |
| 1 | 2 3 4 5 | What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether) |
| 1 | 2 3 4 5 | How severe is the impact on the environmental/ecosystem, over the next 10 years |
| 1 | 2 3 4 5 | Are the ecological effects reversible |
| 1 | 2 3 4 5 | Does the issue affect a large number of people within our ADD district |
| 1 | 2 3 4 5 | How intense is the disruption to our senses from the issue |

ISSUE 13: URBAN RUN-OFF - OF FERTILIZERS, PESTICIDES, OILS, SOLVENTS, ETC.

- | Lowest | Highest | |
|--------|---------|--|
| 1 | 2 3 4 5 | <i>(Circle one per line)</i> |
| 1 | 2 3 4 5 | Can we control or affect the environmental health issue |
| 1 | 2 3 4 5 | How much value does the community place on this EH issue |
| 1 | 2 3 4 5 | How much does the issue affect our economic well being |
| 1 | 2 3 4 5 | How severe are the effects on human health |
| 1 | 2 3 4 5 | Can the health effects be remediated |
| 1 | 2 3 4 5 | What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether) |
| 1 | 2 3 4 5 | How severe is the impact on the environmental/ecosystem, over the next 10 years |
| 1 | 2 3 4 5 | Are the ecological effects reversible |
| 1 | 2 3 4 5 | Does the issue affect a large number of people within our ADD district |
| 1 | 2 3 4 5 | How intense is the disruption to our senses from the issue |

ISSUE 14: CONTAMINATION OF PRIVATE DRINKING WATER SOURCES - from all sources

- | Lowest | Highest | |
|--------|---------|--|
| 1 | 2 3 4 5 | <i>(Circle one per line)</i> |
| 1 | 2 3 4 5 | Can we control or affect the environmental health issue |
| 1 | 2 3 4 5 | How much value does the community place on this EH issue |
| 1 | 2 3 4 5 | How much does the issue affect our economic well being |
| 1 | 2 3 4 5 | How severe are the effects on human health |
| 1 | 2 3 4 5 | Can the health effects be remediated |
| 1 | 2 3 4 5 | What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether) |

- 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
- 1 2 3 4 5 Are the ecological effects reversible
- 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
- 1 2 3 4 5 How intense is the disruption to our senses from the issue

ISSUE 15: BIODIVERSITY/LOSS OF HABITAT

- Lowest Highest (Circle one per line)
- 1 2 3 4 5 Can we control or affect the environmental health issue
 - 1 2 3 4 5 How much value does the community place on this EH issue
 - 1 2 3 4 5 How much does the issue affect our economic well being
 - 1 2 3 4 5 How severe are the effects on human health
 - 1 2 3 4 5 Can the health effects be remediated
 - 1 2 3 4 5 What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether)
 - 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
 - 1 2 3 4 5 Are the ecological effects reversible
 - 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
 - 1 2 3 4 5 How intense is the disruption to our senses from the issue

ISSUE 16: WHAT ELSE? _____

- Lowest Highest (Circle one per line)
- 1 2 3 4 5 Can we control or affect the environmental health issue
 - 1 2 3 4 5 How much value does the community place on this EH issue
 - 1 2 3 4 5 How much does the issue affect our economic well being
 - 1 2 3 4 5 How severe are the effects on human health
 - 1 2 3 4 5 Can the health effects be remediated
 - 1 2 3 4 5 What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether)
 - 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
 - 1 2 3 4 5 Are the ecological effects reversible
 - 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
 - 1 2 3 4 5 How intense is the disruption to our senses from the issue

ISSUE 17: WHAT ELSE? _____

- Lowest Highest (Circle one per line)
- 1 2 3 4 5 Can we control or affect the environmental health issue
 - 1 2 3 4 5 How much value does the community place on this EH issue
 - 1 2 3 4 5 How much does the issue affect our economic well being
 - 1 2 3 4 5 How severe are the effects on human health
 - 1 2 3 4 5 Can the health effects be remediated
 - 1 2 3 4 5 What are the costs of treating human health effects (vs. the cost of eliminating the issue altogether)
 - 1 2 3 4 5 How severe is the impact on the environmental/ecosystem, over the next 10 years
 - 1 2 3 4 5 Are the ecological effects reversible
 - 1 2 3 4 5 Does the issue affect a large number of people within our ADD district
 - 1 2 3 4 5 How intense is the disruption to our senses from the issue

Note on scoring "lowest to highest" - Team members were cautioned that scores for some criteria will be exactly the opposite as scores for others. For example: *How severe is the impact on environmental/ecosystem over next 10 years*- A very severe impact will get a score of 5. Compare this to: *Are the ecological issues reversible*- Very easily reversible effects will get a score of 1, as this puts the issue at a lower priority than effects that are difficult to reverse.



**BARREN RIVER ENVIRONMENTAL HEALTH LEADERSHIP TEAM
PROJECT WORK PLAN**

PROJECT: CONDUCT A PUBLIC EDUCATION CAMPAIGN ON THE HEALTH IMPACTS OF ULTRAVIOLET-B (UVB) EXPOSURE, PREFERABLY IN COORDINATION WITH OTHER LOCAL AGENCIES AND/OR ORGANIZATIONS.

ACTIVITIES THAT WILL HELP ACCOMPLISH OUR PROJECT	EHLT MEMBER RESPONSIBLE FOR CARRYING OUT THIS ACTIVITY	TARGET DATE	WHAT RESOURCES WILL BE NEEDED? EXPENSE ESTIMATE?
<p>STEP 1: Find out what local agencies and organizations are doing already to educate the public about UVB exposure. Kentucky Cancer program [contact name] Farm Family Safety Partnership [contact name] BRHD Farm Safety Program [contact name] So. KY Farm Safety 4 Just Kids [contact name] So. KY Bicycle Club [contact name]</p>	<p>[This was a list of five different names - work group members who had each volunteered to make one contact.] 4/9/98</p>	<p>4/9/98</p>	<p>none</p>
<p>STEP 2: Write a press release on UVB exposure.</p>	<p>[Work Group member name]</p>	<p>4/9/98</p>	<p>none</p>
<p>STEP 3: Finalize press release and distribute to area news media.</p>	<p>[Health Dept. staff name]</p>	<p>4/23/98</p>	<p>Reproduction and mailing costs.</p>
<p>STEP 4: Contact [name of weather director] at [local TV station] on their UVB activities, including the source of their information for UVB alerts/reports.</p>	<p>[Health Dept. staff name]</p>	<p>4/9/98</p>	<p>none</p>
<p>STEP 5: Meet with [news director name] of [local TV station] and discuss the possibility of resuming their UVB alert/report during the evening news. Share some internet sources with him/her, such as the "Intellicast" forecasts. Offer to provide technical assistance as needed.</p>	<p>[names of a work group member and Health Dept. staff]</p>	<p>6/1/98</p>	<p>none</p>

DEMOGRAPHICS

Delaware County is located in central Ohio. During the 1990s, the population of the county grew from approximately 86,000 to 100,000 persons. The county is not ethnically diverse; more than 94% of residents are Caucasian. Delaware is a relatively wealthy county, with a median household income of approximately \$57,000 per year, and only 4.5% of the population falls below the poverty line. The metropolitan center of Columbus is just outside of Delaware County, marking the county as one of the more urban in the state of Ohio. It is the fastest growing county in Ohio and one of the fastest growing counties in the United States.

DELAWARE CITY/COUNTY HEALTH DEPARTMENT

Upon implementation of the *PACE EH* process, the Delaware City/County Health Department (DC/CHD) consisted of approximately 50 staff members and had an operating budget of around \$3 million. Environmental health services claimed nearly \$500,000 of that budget each year. The environmental health division primarily focused on food safety, plumbing inspections, waste management, and emergency response. The Delaware County/City Health Department answered to a Board of Health, responsible for establishing programmatic services and regulations, health department budgeting, employment, and resource allocation. The Board of Health promoted a proactive, community-driven approach to public health.

The DC/CHD demonstrated a well-established history of both assessment activities and community outreach. The DC/CHD Assistant Health Commissioner for Environmental Health had previously worked on developing a statewide public-health assessment process for the state of Ohio. Further, the environmental health division relied on numerous community organizations in the planning and implementation of their activities, including a plumbing advisory board, food service discussion groups, and a local board of realtors that served as an ad hoc committee on public health issues. The department had also developed a capacity for collecting representative community input through focus-group surveys.

BEGINNING THE *PACE EH* PROCESS

In preparation for their *PACE EH* process, the DC/CHD devoted two full-time staff members to planning and implementation. Both had had extensive experience in assessment and community outreach activities. They incorporated the *PACE EH* process into a larger community project titled, "Healthy Delaware." The Healthy Delaware project consisted of the simultaneous undertaking of both *PACE EH* and the Assessment Protocol for Excellence in Public Health (APEXPH), an assessment process designed specifically to investigate the capacity and needs of the local public health agency. The DC/CHD organized a single advisory committee comprised of public and private citizens and local institutions to oversee both assessment processes.

THE DELAWARE CEHA TEAM

PACE EH facilitators from the DC/CHD identified individuals within the community that they recognized as being valuable to conducting any local community-driven process. Each candidate was sent a letter inviting him or her to join the community-based environmental health

**FOR MORE DELAWARE GENERAL HEALTH DISTRICT
INFORMATION: (704) 368-1720**

assessment (CEHA) team. The request was followed up with a personal phone call from the *PACE EH* facilitators from within the DC/CHD. This effort resulted in the formation of a CEHA team made up of 26 community volunteers, ranging from city officials to local business people.

GENERATING AN ENVIRONMENTAL HEALTH ISSUE LIST

From the outset, the Delaware County CEHA team focused its efforts on producing a community environmental health assessment that would incorporate many opportunities for collecting, analyzing, and acting upon widespread community input. Taking a cue from the methodology proposed in *PACE EH*, the CEHA team did not limit the process by coordinating issue identification around either the existence of, or feasibility of collecting, specific environmental health data. Instead, they began the issue identification process with the proverbial “blank slate.” Opting to temporarily put aside the extensive local environmental health knowledge held individually by the assessment-team members, they chose to concentrate on learning about the environmental health of the community from the community. To this end, the team employed several specific community outreach programs.

FOCUS GROUPS

Five focus groups were convened with the assistance of a professional consulting firm to ensure the quality and accuracy of the data collected. The focus groups involved a total of 65 participants, who were randomly chosen from each of the five distinct geographic regions in the county. The participants were convened such that each focus group accurately represented the overall demographic composition of each region.

The aim of the focus groups was to collect public input about perceived environmental health issues in Delaware County. Staff from the consulting firm facilitated the discussions. Each facilitator asked the focus groups to answer the following questions.

- What is best about living in Delaware County?
- What are the biggest countywide problems?
- What does the word “environment” mean?
- What are the main environmental concerns in the county?
- What are the main environmental health concerns in the county?
- How should these concerns be prioritized?
- What should be done to resolve these concerns?

Responses from the five focus groups were then analyzed for individual content and were compared to determine broad similarities and differences. The consulting firm provided the CEHA team with a report that both detailed specific individualized responses and presented a broad overview of public perception of local environmental health. The report also relayed suggestions for prioritization of, and action upon, many environmental health issues identified by the general population.

FACILITATED DISCUSSIONS

The CEHA team also conducted 24 facilitated discussions throughout the different townships, villages, and geographic regions of the county. Hundreds of individuals, representing every local township and numerous community organizations, took part in the facilitated discussions. The aim of the facilitated discussions, like the focus-group study, was to develop an understanding of the community perspective of the environmental health issues and priorities of

Delaware County. The facilitated discussions were led by representatives of the CEHA team and followed a script similar to the one employed throughout the focus group discussions. The facilitated discussions, however, served an educational function by introducing the participants to the PACE EH project, the role of the CEHA team, and the use and value of environmental health indicators in relation to the project.

The team compiled a less statistically random, but far more extensive, collection of data representing local perspectives of environmental health than was generated by the focus group study. Furthermore, team members had also begun constructing a framework for coalition building between themselves and the community. In effect, the community outreach achieved by the facilitated discussions was not limited to data collection; it also incorporated project promotion and the germination of future coalition building with community representatives.

KEY INFORMANT INTERVIEWS

The assessment committee organized 26 key-informant interviews. The informants were chosen based on a demonstrated expertise, or occupation, in environmental and/or environmental health issues. Open-ended questionnaires addressing perceived environmental health problems in the county and recommendations for addressing them were sent in advance to each of the key informants; follow-up phone interviews were conducted to elicit responses. The informants were also given the option to supply written comments. The key-informant interviews were valuable tools for comparing the perspective of the general populace to that of local environmental and environmental health “experts.” The key-informant interviews validated community opinion and provided more sophisticated issue analysis that served to orient future project planning.

CEHA TEAM OPINION

To both coordinate future activities and use the environmental health expertise demonstrated by individual members of the Delaware County CEHA team, each team member was asked to present his or her opinions regarding local environmental health to the rest of the team. This procedure was designed to both develop additional data for analysis and familiarize the team with the types of data they would soon be analyzing. However, this step also produced an unexpected benefit. It demonstrated that, for the most part, the environmental health concerns and priorities expressed by the community mirrored those suggested by the individual team members. Thus, it served to remind the team that they in fact are representatives of the community, and that potential exists for widespread community consensus in addressing local environmental health issues.

DATA MANAGEMENT

Two months were spent compiling the information from the focus groups, facilitated discussions, key-informant interviews, and CEHA team statements of opinion. Through analysis of the data, 465 distinct “concerns” pertaining to the environmental health of the community were identified. The concerns ranged from global warming and unchecked population growth to local water quality and solid-waste management.

This list of 465 concerns was aggregated and grouped into the following 19 distinct environmental health categories. (The CEHA team considered 13 of these categories “traditional” environmental health distinctions and developed six additional categories.)

Traditional Environmental Health Categories:

- Water supply, water quality and water pollution
- Sewage disposal
- Indoor and outdoor air pollution
- Solid waste management
- Food safety and protection
- Animal control (e.g., insects, rodents, and parasites)
- Housing safety and sanitation (including residential environmental control)
- Radiation safety
- Noise control
- Pesticide and toxic substances control
- Occupational environmental control
- Recreational environmental control
- Injury prevention, injury control, and public safety

Additional Environmental Health Categories:

- Recycling
- Environmental education and funding
- Environmental enforcement, regulation, law, and zoning
- Quality of life
- Development
- Parking lot (general issues not directly related to environmental health)

A series of graphs was developed to visually represent the findings of the research. A sub-committee that was derived from the assessment team developed “frequency” criteria and conducted a frequency analysis to determine which issues were mentioned most often and in which geographic regions specific issues were deemed significant. This analysis allowed for further organization of the list and facilitated the grouping of some issues. Next, the CEHA team reviewed the issues for similarities and redundancies. Finally, they isolated and removed overarching issues and those unrelated to the environment from the developing issue list.

The grouping of issues and elimination of redundancies reduced the initial 465 environmental health concerns to 194. Further refinement of specific issues, and a broadening of the categories, reduced the list to 66 issues. The team then combined the results of a frequency analysis and a set of modified criteria originally presented in the *City of Columbus Priorities '95 Project* (Delaware City/County Health Department, 1995) that focused on data availability, potential risk, feasibility of public comprehension, and potential for action. The remaining 66 issues were screened, and 20 local environmental concerns were identified. The CEHA team approved all the issues in the list by consensus and found that these issues represented a 95% correlation with the most frequently mentioned issues gathered from the Delaware community at large. The identification of the top 20 issues concluded Phase I of the DC/CHD *PACE EH* project.

The experiences of the Delaware CEHA team indicate that widespread community outreach efforts as a form of data collection was valuable in many ways. It both produced relevant environmental health data for analysis and provided a conduit between the team and the community that set the stage for project promotion and coalition building. Community outreach, combined with research, provided the team not only with insight into the environmental health

values and perceptions of the community, but also the recognition that their task was both valuable and appreciated. Community outreach efforts informed the CEHA team that not only were they representatives of the community, but members as well.

COMMUNITY RANKING SURVEYS

The Delaware CEHA team began Phase II of their *PACE EH* process through a community outreach process to develop a ranking of the 20 priority environmental health issues identified in Phase I. The DC/CHD set up interactive computer kiosks for local high school government class seniors and Delaware County Fair goers. These kiosks allowed community members to participate in a survey designed to rank the identified environmental health issues. The CEHA team also mailed a copy of the ranking survey to every household in Delaware County.

DEVELOPING INDICATORS

When developing indicators to represent the environmental health issues identified and ranked in previous steps, the Delaware CEHA team strove to adhere to the methodology presented in *PACE EH*. The CEHA team developed the indicators prior to beginning data collection. Other DC/CHD projects and existing state and national models provided examples of indicators. The CEHA team organized their indicator development efforts around the standards presented in the *PACE EH* methodology; they required their indicators to be simple, understandable, acceptable, measurable, and defensible. Using these simple guidelines, the team devised 20 indicators.

SELECTING STANDARDS AND CREATING ISSUE PROFILES

The Delaware CEHA team used the standard format for developing issue profiles offered in the *PACE EH* guidebook. Data for each issue were collected from all available state and local sources. Collected data were presented to the CEHA team and evaluated for validity and quality.

The Delaware CEHA team found that data were not available for every environmental health issue and indicator identified. Interestingly, where data were lacking, new opportunities for furthering the *PACE EH* process were plentiful. A dearth of data resulted in the development of coping strategies, including widespread community and agency support for new data collection programs, development of new data sources and data providers, re-evaluation of chosen indicators, and re-analysis of existing data sets.

RANKING AND PRIORITIZING THE ISSUES

The Delaware CEHA team devised a ranking system that reflected the prototype offered in the *PACE EH* tool, but that also took into account specific local values and concerns identified by the team. The team devised a numerical weighting system such that each ranking criteria was compared to one another and given a relative “importance” score. The issue profiles were ranked against the criteria to develop a weighted list of ranked issues.

The Delaware CEHA team adhered closely to the priority setting methodology developed in *PACE EH*. They used the same criteria but decided to place substantial emphasis on the results of the ranking exercise. In short, they decided to proceed with action planning more on the basis of the identified wants and needs of the community, and less on the basis of external factors that may have made some issues easier to act on than others.

CREATING ACTION PLANS

Thirteen of the 20 identified issues have been assigned to four community-action committees designed to implement activities that will improve the environmental health of Delaware County. One committee is focusing on the preservation and development of local green space. Another is addressing surface water pollution. A third is advocating for broader recycling efforts. The fourth is responsible for developing environmental education techniques to accompany local environmental enforcement activities.

CURRENT STATUS OF THE *PACE EH* PROJECT

Although most of the specific action plans are still under development, the “green space” community-action committee joined with the Delaware County Preservation Parks Levy Committee (DCPPLC) in a successful effort to promote the findings of the *PACE EH* assessment. The DCP-PLC used the data and results from the *PACE EH* assessment to help enact a \$1 million parks levy for Delaware County.

ADVICE FOR FUTURE USERS

The Delaware CEHA team identified some specific aspects of their *PACE EH* process that positively shaped their own experiences and will likely enhance future *PACE EH* projects. These aspects are as follows:

- the Delaware County *PACE EH* project adapted a very broad definition of environmental health, which affected every step of the process;
- the Delaware County community identified issues outside the traditional scope of authority of local health departments’ environmental health divisions;
- the ranking method was designed to compare quality of life issues, ecosystem health issues, and environmental (public) health issues;
- for some issues (e.g., radon reduction and mitigation programs), community priorities did not support health department priorities;
- some programs (e.g., food protection, a high priority local- and state-mandated program) were not mentioned as a concern or priority by the community;
- the CEHA team agreed that the community should be trusted to identify environmental issues of concern;
- community collaboration is the foundation of *PACE EH* and can be applied to every step in the process; and
- the project required a great deal of staff time, access to consultants, a dedicated *PACE EH* community assessment team, support and dedication from all environmental health division staff, the Health Commissioner, and the Board of Health.

***PACE EH* TOOLS AND DOCUMENTS USED BY DELAWARE CITY/COUNTY HEALTH DEPARTMENT**

- A. *PACE* Committee (CEHA membership list)
- B. Community Environmental Health Assessment Questionnaire
- C. “What Do You Think?” (community newsletter survey)
- D. Facilitated discussion script and guidelines (focus group survey tool)
- E. Table 1 and Table 2: Criteria used to refine environmental health issues list
- F. Environmental Issue: Noise Control (sample profile)
- G. “Leading the Country” (sample media release)

**HEALTHY DELAWARE 1999
PACE EH COMMITTEE**

Ohio Environmental Protection Agency

Delaware State Park

PPG Industries, Inc.

Delaware County Sheriff

Recreational Unlimited (sports and recreation organization for
physical and developmental disabilities)

Emergency Management Agency

Delaware City Fire Department

People In Need (charitable organization serving
Delaware County-United Way agency)

Soil and Water Conservation

Scioto Land Surveying Service

DKMM Solid Waste District

Ohio Wesleyan University

Salvation Army

Nature Conservancy/Government and Community Relations

Delaware City-County Health Department

Marlboro Township Trustee

Grady Memorial Hospital

City of Delaware

HER Realtors, Inc.

4. Please list ALL the environmental concerns that affect your quality of life:

5. Please list ALL the environmental concerns that affect the ecosystems (our natural environment) in your county:

5A. From all those environmental concerns that you listed above, pick five (5) which are the most important to you. List them in order of importance.

5B. Please tell us what can be done to resolve those five concerns, and who should be responsible for developing and implementing that strategy.

<u>ISSUE</u>	<u>STRATEGIES</u>
1 _____	1 _____
2 _____	2 _____
3 _____	3 _____
4 _____	4 _____
5 _____	5 _____

Thank you for your participation.
Research Assistant
PACE EH
Delaware City/County Health Department

WHAT DO YOU THINK?

WE ARE LISTENING TO YOU! Please complete and return this survey by Thursday, December 31, 1998 to tell us what environmental and personal health issues are important to you. We plan to use the information when designing future health programs.

Please write your zip code: _____

Please check the five environmental issues that concern you the most.

- | | |
|---|---|
| <input type="checkbox"/> Trash & litter in public areas | <input type="checkbox"/> Lack of environmental enforcement |
| <input type="checkbox"/> Loss of farmlands | <input type="checkbox"/> Noise pollution |
| <input type="checkbox"/> Loss of green space, lack of parks | <input type="checkbox"/> Stream pollution - factories and farms |
| <input type="checkbox"/> Drinking water pollution | <input type="checkbox"/> Transport of hazardous chemicals |
| <input type="checkbox"/> Lack of environmental education | <input type="checkbox"/> Stream pollution - septic systems |
| <input type="checkbox"/> Health effects of chemicals | <input type="checkbox"/> Unsafe/abandoned properties |
| <input type="checkbox"/> Development out of control | <input type="checkbox"/> Need for better animal control |
| <input type="checkbox"/> Septic systems not working | <input type="checkbox"/> Need for more recycling |
| <input type="checkbox"/> Household hazardous waste disposal | <input type="checkbox"/> Underground water pollution |
| <input type="checkbox"/> Indoor air pollution | <input type="checkbox"/> Outdoor air pollution |

Please check the three mental health issues that concern you the most.

- | | |
|---|---|
| <input type="checkbox"/> Alcohol and drug abuse | <input type="checkbox"/> Severe and persistent mental illness |
| <input type="checkbox"/> Depression | <input type="checkbox"/> Lack of support systems |
| <input type="checkbox"/> Increased divorce rate | <input type="checkbox"/> Suicide |
| <input type="checkbox"/> Lack of family stability | |

Please check the three lifestyle choice issues that concern you the most.

- | | |
|---|--|
| <input type="checkbox"/> Drinking and driving | <input type="checkbox"/> Lack of motivation |
| <input type="checkbox"/> Obesity | <input type="checkbox"/> Poor nutritional habits |
| <input type="checkbox"/> Alcohol abuse | <input type="checkbox"/> Lack of recreational facilities |
| <input type="checkbox"/> Lack of exercise | |

Please check the three chronic disease issues that concern you the most.

- | | |
|--|--|
| <input type="checkbox"/> Alcoholism | <input type="checkbox"/> Mental retardation/developmental disabilities |
| <input type="checkbox"/> Stroke | <input type="checkbox"/> Cancer |
| <input type="checkbox"/> Alzheimer's disease | <input type="checkbox"/> Increase in medically fragile infants |
| <input type="checkbox"/> Physical handicaps | <input type="checkbox"/> Diabetes |
| <input type="checkbox"/> Asthma | <input type="checkbox"/> Heart disease |
| <input type="checkbox"/> High cholesterol | |

Please check the three lack-of-life skills issues that concern you the most.

- | | |
|---|--|
| <input type="checkbox"/> Lack of life-long education | <input type="checkbox"/> Vocational training needs |
| <input type="checkbox"/> Lack of parenting skills | <input type="checkbox"/> Problems relating to banks, schools, post offices, and other institutions |
| <input type="checkbox"/> Need for life skills training in prisons | |

THANK YOU!

**WHEN COMPLETED PLEASE FOLD, SEAL WITH TAPE, AND MAIL.
NO POSTAGE IS NEEDED.**

D

FACILITATED DISCUSSION SCRIPT AND GUIDELINES

- Record a count of the number of people in attendance.
- Pass out the “Healthy Delaware” newsletter to each person before you begin the facilitated discussion session (dots, scissors, tape, markers, newsletters, and flip chart/easel will be provided to you).
- Introduce yourself and the agency and/or interest you represent.
- Explain that you have volunteered as a member of a community based project called *PACE EH (Protocol for Assessing Community Excellence in Environmental Health)*.
- Refer to “Healthy Delaware” newsletter and explain the organization and philosophy of the entire project. Explain that there is a community advisory committee, a *PACE EH* committee and an APEX committee. The APEX process is focused on personal health issues and health behavior. The *PACE EH* process is focused on the environment and environmental health issues. The goal of both projects is to develop a strategic action plan to address the issues of concern to the community and to set community-based standards to work towards the issues identified as a high priority (an example of a community-based standard is “a rate of 5 unsafe private potable water wells per 1,000 tested for bacteria by the year 2010,” or “one lead-poisoned child per year by the year 2005”).
- To begin the discussion, ask your audience to tell you what they are most concerned about in their environment. Their “environment” could be defined as where they work, play, recreate (in all of Delaware County, local neighborhoods, townships, or schools) or more global environmental issue. Stress that the *PACE EH* project is focused on the environment and that you want to know what they are most concerned about and what they like and dislike about the environment of Delaware County. Get them to think about things about their environment that they feel may affect their health. Try not to bias their responses, and if they give you an issue that may be unrelated to the environment (like “teen pregnancy”), please write it down anyway. Every response is a good response!!!!
- Write down and number each specific issue on the flip chart. If an issue is too vague (like “air pollution”), please probe to get to the real concern (i.e., “air pollution from a factory in Delaware”). Please categorize similar issues under the same number.
- After a flip chart is filled with items, tear it off and tape it to the wall so that it is accessible to the group. Write as large as possible so that the group can easily read the list from a distance (6-8 items per chart).
- When all issues are recorded, or after about 30 minutes (whichever comes first), ask the group to go to the charts and place their seven dots on the issues that are important to them. They may place all seven on one issue, or spread them around as they wish.
- Ask for volunteers to help with the project and to call Paul or Susan at the Health Department at 368-1700, if they are interested in helping in any way.
- Let the group know that their participation is appreciated and that they have contributed to the process by helping us identify and compose our initial environmental issue list. Also, they will be informed of the results during each step of the *PACE* process.

NOTE:

Record a people count.

Record the name of the group on one of the flip charts.

TABLE 1. PACE EH FREQUENCY CRITERIA USED FOR REFINEMENT OF THE ISSUES LIST.

Was the item mentioned in all three lists (Facilitated Discussions, Focus Groups, and *PACE EH* Committee)?

How many votes or dots did each issue receive from each group?

How many times was each issue mentioned by the different groups?

How many times was each issue mentioned in the five (NW, NE, C, SE, SW) geographic regions of the county?

TABLE 2. PACE-EH FINAL CRITERIA USED FOR REFINEMENT OF THE ISSUES LIST.

Does this issue fit within the project's mission?

Is the issue actually a risk?

Is the issue environmental?

Is the issue meaningful and intelligible to the public?

Are there data available to analyze this issue?

Will the strategy on the issue be easily implemented?

Frequency criteria analysis (Table 1)

Removal of all parking lot and overarching issues

ENVIRONMENTAL ISSUE

NOISE CONTROL

SCOPE

Life style change: need naturalization of lawns, weed whackers, lawn mowers, leaf blowers, boom boxes, car stereos, traffic, Polaris, Zoo, Wyandot Lake, fire sirens, power boats on Alum Creek, traffic noise (bypass around the city), noise-trash vehicles, pickups, trucks, trimmers, barking dogs, quarry blasting-noise pollution. Need sense of serenity and quiet. Noise levels/pollution: highway, freeway, industry, airplanes, construction, development near industrial parkway may create more noise and traffic.

BACKGROUND

In recent years public concern over noise pollution has resulted in a number of Federal and local laws and regulations aimed at quieting jet aircraft, motor vehicles, construction and other heavy equipment. But a more immediate and continuing problem is noise around the home. It is reaching levels that can cause not only annoyance and emotional stress, but can actually damage hearing. Among the noise offenders are power mowers, chain saws, shop tools, and lawn care equipment. Added to the noise caused by these labor-saving devices are the effects of cost-cutting building techniques, poorly insulated walls and ceilings, and thoughtless pressures by developers near high-noise areas such as jetports and freeways.

In the past, too many people believed the answer to excessive noise was simply to get used to it. But we know today from medical research and experience that the rising level of environmental noise in our technological society is becoming a health problem resulting in gradual hearing loss and emotional tension. Getting used to noise is obviously no solution to medical problems that may progress unnoticed, until it is too late to remedy them.

Sound is measured in logarithmic units called decibels, abbreviated dB. The hearing threshold, which is the point where a person begins to hear sounds, starts at zero dB. A soft whisper at 15 feet is equal to 30dB, a busy freeway at 50 feet is approximately 80, and a chain saw can reach 100 or more at operating distance. Brief exposure to noise levels over 140 dB without hearing protectors may even cause pain.

However, one can suffer a hearing loss from exposure to much lower noise levels. Continuous exposure for eight hours over a number of years to noise levels exceeding approximately 80 dB can cause permanent hearing loss. The degree of hearing damage may vary with individuals.

Below those levels, noise may still cause hearing loss and can also have many other undesirable effects. It can interfere with speech communication and can impair a child's ability to understand and pronounce words correctly. Noise can be a source of annoyance, interfere with study, disturb the performance of complicated tasks, and reduce the opportunity for privacy. It can also adversely influence mood, interrupt sleep and prevent relaxation.

It is obvious from all these things that noise not only affects human health but the quality of life. Noise pollution is worse in dwellings where the construction is of a type that relies on thinner and lighter materials. These materials do not effectively block noise and vibration from outside or between rooms, and in some cases can actually amplify sound.

Poor siting may also add to the noise problem. Housing developments often are built near the landing pattern of major airports, and apartment houses located near high-speed highways. Poor housing placement is on the increase in many communities across the country. To cope with the problems of lightweight construction and poor planning, the U.S. Department of Housing and Urban Development (HUD) has developed "Noise Abatement Guidelines" to aid in community planning, construction, modernization and rehabilitation of existing housing. In addition, the Veterans Administration requires disclosure of information to prospective buyers about the exposure of existing V.A. financed houses to noise from nearby airports. For the community, the control of noise around the home involves proper land use, zoning, and building regulations. For the construction industry, it means better engineering. For the homeowner, it means insistence on quieter appliances and equipment, and the initiative to create less noisy dwellings.

EPA has under preparation a model building code for various building types. The code will spell out extensive acoustical requirements and will make it possible for cities and towns to regulate construction in a comprehensive manner to produce a quieter local environment. The Noise Control Act of 1972 provides EPA with authority to require labels on all products, both domestic and imported, that generate noise capable of adversely affecting public health or welfare and on those products sold wholly or in part for their effectiveness in reducing noise (such as acoustic tile, some types of carpeting, certain building materials, etc.). EPA is initiating a study to rate the noise on users and other persons normally exposed to it. Results of the study will be used to determine whether noise labeling or noise emission standards are necessary.

NOISE AROUND THE HOME

Noise source	Sound level for operator (in dBA)
Electric Lawn Edger	81
Home Shop Tools	85
Gasoline Power Mower	87 to 92
Gasoline Riding Mower	90 to 95
Chain Saw	100
Stereo	Up to 120

Appliances in the home environment are usually above 85 decibels. They include hundreds of yard-care and shop tools. Any amount of exposure to such equipment will probably interfere with activities, disrupt the neighbor's sleep, cause annoyance and stress, and may contribute to hearing loss. Both gasoline and electric walk-behind lawn mowers ranged from about 87 to 92dB at the operator's ear, and even 50 feet away reach up to 72 dB; some riding mowers reach 83 dB at 50 feet.

BRIEF SUMMARY OF LOCAL CONDITIONS

Noise complaints received by the Delaware City-County Health Department. Shawnee Hills resident complaint filed, June 1995. Complaint was concerning the outdoor concert music from the Bogey Inn and the Columbus Zoo. The music was too loud; disrupting lifestyle. The Health Department took noise levels with a dosimeter from the address of 9076 Shawnee Trail in reference to the complaint. Levels were documented on July 21, July 28, and August 11, 1995. The Board of Health decided not to proceed with noise regulations at this time, based on employee's research and documentation.

In June of 1996, the Health Department received a complaint about outdoor band music played at the Bogey Inn. The Health Department asked for an opinion from the Prosecutor's office whether the Health Department has the authority to contract with law enforcement officers to conduct community noise enforcement within the stipulations of the regulation. The prosecutor's office response indicates that the Health Department can adopt a noise regulation pursuant to ORC Section 3709.21 and work with local law enforcement agencies to enforce that regulation. A noise committee was formed by the Assistant Health Commissioner which included local law enforcement, Township Trustees, public representatives, the Delaware Board of Health and an ear specialist. The readings used by the City of Columbus and the City of Westerville were used as guidelines when dealing with the Shawnee Hill complaint.

In August of 1997, the Health Department received a complaint about outdoor band music played at the Bogey Inn. Also received a noise complaint on Coover Road about home aeration motors. This was referred to the Ohio EPA. Received a noise complaint about public address system announcements on Hyatts Road.

Polaris Amphitheater project was completed in 1994. The Columbus Board of Health documented complaints from the beginning. There were calls made to the Delaware County Commissioners at home from the Orange Township residents complaining about the noise initiated at a meeting with the Columbus City Council in August of 1997. A Polaris Noise Group was formed. The Health Commissioner has continued to represent the Health Department on this Committee. To this date, Polaris Officials continue to work on a compromise including: 1) building a permanent sound wall, 2) initiating a resident complaint phone line, 3) incorporating a new sound system in the lawn area, 4) targeting a 100-decibel level maximum sound level, and 5) attempting to handle complaints effectively and efficiently.

Overall, the parties involved are not totally satisfied. The 1999 season will give a better indication of their commitment. The Committee includes:

- Columbus City Council
- Columbus Department of Trade and Development
- Columbus City Attorney
- Mid-Ohio Regional Planning Commission
- Columbus Board of Health
- Delaware Board of Health
- Orange Township Trustees
- City of Westerville
- Delaware Commissioners
- Delaware Sheriff
- Sunshine Productions
- Residents of Columbus, Westerville, and Orange Township

November 14, 1997, received a noise complaint about low humming noise near the Village of Galena. It has disappeared over time.

October 14, 1998, received an indoor noise complaint about Delaware City Hall, that their HVAC system was too loud.

COMMUNITIES AND NOISE REGULATIONS

Community	Facilities	Regulations
Columbus City	Ohio Stadium, Ohio State Fair, Polaris, Cooper Stadium	Yes
Franklin County	Scioto Downs, Buelah Park	No-uses Ohio Department of Health Guidelines
City of Newark	Residential and industrial program	City ordinance-enforced by Police Department
Licking County	Buckeye Lake Music Center, National Trail Raceway	No
Summit County	Blossom Music Center	No
Cuyahoga County	Landfill truck noise	No
Cleveland County	Residential and industrial	Public Safety enforces and oversees noise program
Cincinnati County	Riverfront Stadium, Riverbend Music Center	No
Hamilton County	Aircraft monitoring	No
Montgomery County	Dayton Parks, City of Troutwood, Airport	No
Warren County	Timberwolf, Kings Island	No (several cities within the county have ordinances)
Lucas County	No particular noise problem	No
Toledo County	Zoo-Amphitheater	No (noise enforced by Police Department)
Hamilton County Health Department, Novlesville, Indiana	Deer Creek Music Center	Noise ordinance for Hamilton County that the Sheriff enforces (curfew)
Portland, Oregon	Various	Issues permits based on size of event and parameters they must fall under, including decibels and ending time
Burgettstown, Pennsylvania	Star Lake Amphitheater	No

LOCAL COMMUNITIES WITH NOISE ORDINANCES

Community	Ordinance
Powell	Yes
Shawnee Hills	Yes
Ostrander	No
Galena	No
Delaware City	Yes
Ashley	No
Sunbury	No

APHA MODEL STANDARDS GOALS AND OBJECTIVES

FOCUS	OBJECTIVE	INDICATOR
Occupational noise-induced hearing loss	By _____ the number of new cases of occupational noise-induced hearing loss should be reduced to _____.	Cases of occupationally induced hearing loss
Exposure to excessive noise levels	<p>By _____ the residents of the community will not be exposed to noise levels in the *_ environment exceeding **.</p> <p>*Insert specific environment, e.g., commercial, industrial, residential, occupational</p> <p>**Insert specific described levels for instantaneous exposure and/or specified periods of time. At a minimum, the maximum permissible noise levels should be established for residential, commercial, industrial, and noise-sensitive areas. There should be difference between allowable daytime and nighttime levels, allowances for varying background, considerations of impact versus steady noise, and designation of varying measuring techniques. Indicators of noise should be specified by area.</p> <p>Criteria should be developed for regulating noises which because of their nature, cannot be easily measured, e.g., animal, sporadic, varying. Criteria should also be developed for special categories of noise-intensive activity, e.g., emergency utility repair, construction, traffic, and recreation.</p> <p>The latest technical data should be consulted in developing these criteria. Reviews of recent literature and research, along with a review of recent code and criteria models that have proven effective, will be extremely helpful.</p>	Specific noise levels
Prevention services	<p>By _____ the community will be protected by programs to provide an environment free from noise that jeopardizes its health and welfare.</p> <p>a. By _____ criteria will be adopted and disseminated with respect to levels of noise requisite to protect the public's health and welfare with an adequate margin of safety.</p>	<ul style="list-style-type: none"> • Program operating • Complaints/surveys of sleep interference, auditory pain, other physical-psychological disturbances • Surveys of noise levels
	<p>Model standard note: These criteria may provide for levels more stringent than the levels identified in 1974 by EPA.</p> <p>a. By _____ a community code will be adopted incorporating standards, surveillance, complaints monitoring, and enforcement procedures.</p> <p>b. By _____ provisions will be established to regularly review and revise criteria and codes in light of epidemiological advances with respect to the health effects of noise and technological advances with respect to noise control</p> <p>c. By _____ enforcement programs will be established in the community, including penalties for failure to abate violations.</p>	

	<p>d. By ____ there will be an operating and effective, coordinated program of noise control following a written protocol that identifies noise control responsibilities of different agencies within the government that may be responsible for or contribute to the regulation of various components of a comprehensive pollution control program. For example, health department, zoning department, building inspector, police department, department of public works, airport authority, and others.</p> <p>e. By ____ there will be an operating and effective, coordinated program of noise control following a written protocol that identifies noise control responsibilities of different agencies within the government that may be responsible for or contribute to the regulation of various components of a comprehensive pollution control program. For example, health department, zoning department, building inspector, police department, department of public works, airport authority, and others.</p> <p>Model standard notes: Documents issued by the EPA and others should be consulted in developing these criteria, e.g.,</p> <ol style="list-style-type: none"> 1. Public Health and Welfare Criteria for Noise, July 1973, EPA 2. Information of Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974, EPA 3. Protective Noise Levels Condensed Version of EPA Levels Document, November 1978, EPA 4. Model Noise Control Ordinance, September 1975, EPA <p>f. By ____ a protocol identifying noise control responsibilities will be established among different governmental agencies responsible for regulating various elements that may contribute to noise pollution.</p>	
Control Strategy	<p>By ____ the community will be protected by a strategy for noise abatement throughout the community environment, including noise-sensitive areas, transportation, occupational, recreational, or residential environments.</p> <ol style="list-style-type: none"> a. By ____ all complaints about excessive noise will be investigated. b. By ____ abatement action will be taken against all of persistent violators. c. By ____ the community will have available a program to educate citizens, employees, and special at-risk groups about health effects of short-and long-term exposure to excessive noise. d. By ____ information will be collected and disseminated regarding certified low-noise emission products available for public and private use (pursuant to Section 15 of the Noise Control Act of 1972) (42 U.S.C. & 914). 	<p>Existence of strategies that are operational or can be implemented</p> <p>Percent of complaints investigated</p> <p>Percent of abatement of actions taken</p> <p>Percent of abatement actions taken</p>

OTHER APPROPRIATE GOALS/STANDARDS
(SPECIFY LOCAL RULE, REGULATIONS, OR OTHER RELEVANT GUIDELINES.)

SUGGESTED INDICATORS AND DATA SOURCES

Indicator	Data Sources
Number of noise complaints received in: OSHA Standards workplaces; Fence line regulated by Ohio EPA; Public standards adopted by government per year; number of complaints abated per year	OSHA, Health Department, local communities
Number of unacceptable noise levels in schools and other public assembly areas surveyed per year	Health Department Townships, Villages, Community Records
% of communities with noise abatement standards adopted	Community Records
Number of existing written protocols to address noise issues	Health Department Sheriff Police Departments Columbus Health Dept., Community Records
Number of community educational programs in place	Community Records
Number of communities with noise abatement Development strategies, i.e., soft landscaping	Community Records-Powell

HEALTH STATUS
POPULATION AT RISK
EXPOSURE/HEALTH RISK
PUBLIC HEALTH PROTECTION FACTOR

EVALUATION (REVIEW OF LOCAL DATA) SUMMARY OF MAGNITUDE OF PROBLEM IN THE COMMUNITY

RISK CHARACTERIZATION (COMMUNITY'S RATIONALE FOR RANKING THIS PROBLEM AT HIGH, MEDIUM, LOW

Leading the Country –

Listening to Your Concerns



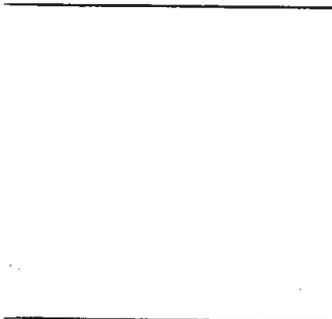
Paul Hutlin
Chairman
PACE-EH Committee

We are listening to the community through a project called PACE-EH. PACE-EH is a community environmental health assessment and stands for Protocol for Assessing Community Excellence in Environmental Health. The Delaware Health Department was chosen as one of only ten sites in the United States to test a program that involves the community in identifying environmental health concerns. PACE-EH was developed by national organizations with support from the Centers for Disease Control (CDC). It is a guide used to assess and evaluate local environmental conditions and concerns, collect environmental health data, identify populations at risk, rank local environmental health concerns, and set environmental standards and strategies for our community.

**456 concerns
have been
grouped into
20 issues.**

PACE's mission is to be a "dynamic collaborative process, which exists to assess, protect, and improve the community's environmental quality and health. This will be achieved through research, public education and implementation of a Healthy Delaware plan. The plan will promote public policy on issues impacting environmental quality, sustainable development, health risk, and quality of life."

What Has PACE-EH Been Doing?



*we met with hundreds of people
from Delaware County.*

Since it began, the PACE-EH Committee has been working to identify and rank the environmental concerns of Delaware County residents. In May and June, the Committee, with support from the Health Department, started gathering community input about environmental issues from different regions of the county. The Health Department contracted with a professional consulting firm to conduct focus groups. The groups were selected to represent a variety of residents from all areas of the county. At the same time, 24 discussion groups were held throughout Delaware County at township meetings and community group meetings. Hundreds of individuals represented groups from 4-H to seniors. July was spent looking at information from the focus groups and discussion groups. Over four hundred fifty environmental concerns were gathered from the community. They ranged from global warming to trash pick-up. The list was gradually narrowed down to twenty. Some of the issues have already been addressed, and the concerned groups received answers promptly. In the future, PACE will be developing action plans to address these issues.

Your Health, Your Choice, Your Future!

PACING Delaware County



“Vacant buildings—it’s a bad sign of a decaying community...”
Delaware Focus Group

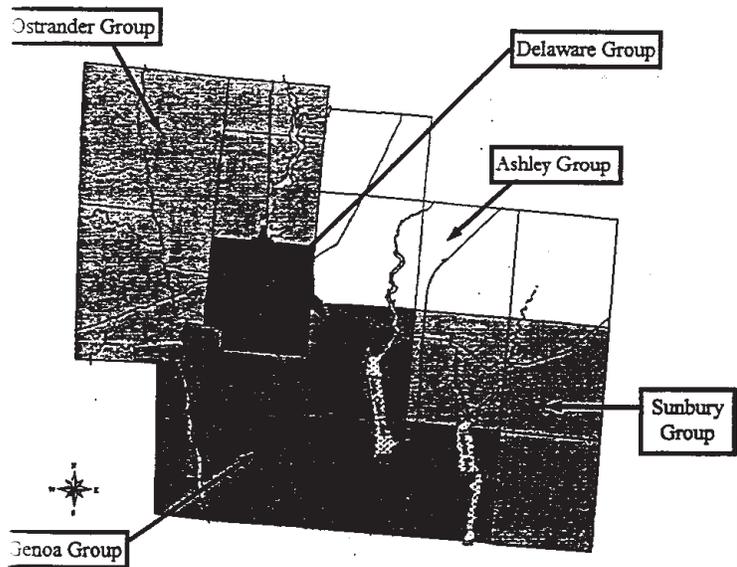
“WE NEED TO (ENVIRONMENTALLY) EDUCATE CHILDREN FOR THE LONG RUN.”
ASHLEY FOCUS GROUP

“The uncontrolled animal population in Delaware County...”
Genoa Focus Group

“Preserving natural environments.”
Ostrander Focus Group

“Overdevelopment of land, house density, goes back to zoning...”
Sunbury Focus Group

5 Focus Group Areas



- PACE - EH
 Top 20 Issues
 (Not in rank order.)**
- Trash & litter in public areas
 - Need more parks, green space
 - Lack of environmental education
 - Development out of control
 - Household hazardous waste disposal
 - Lack of environmental enforcement
 - Stream pollution – factories & farms
 - Stream pollution – septic systems
 - Need for better animal control
 - Underground water pollution
 - Outdoor air pollution
 - Loss of farmland
 - Drinking water pollution
 - Health effects of chemicals
 - Septic systems not working
 - Indoor air pollution
 - Noise pollution
 - Transport of hazardous chemicals
 - Unsafe / abandoned properties
 - Lack of recycling opportunities

*What environmental issues are important to you?
 Fill out the enclosed survey to let us know.*

DEMOGRAPHICS

Island County consists of Whidbey Island and Camano Island. Whidbey Island, the longest island in Puget Sound, has transportation links to the mainland at both ends. A bridge connects the north end, and ferry service transports people to and from the center and south end of the island. The three incorporated communities on Whidbey Island are Oak Harbor (the largest city) and the two smaller towns of Coupeville (the county seat and oldest town) and Langley. Camano Island is situated between Whidbey Island and the mainland (connected by a highway). Camano Island is primarily a rural community.

ISLAND COUNTY HEALTH DEPARTMENT

At the time Island County Health Department committed to pilot testing the *PACE EH* methodology, the Department provided services to a primarily rural jurisdiction that had a population of 70,300. The health department had an operating budget of \$1,967,937 and a staff of 47 employees. Environmental health services provided by the health department included the monitoring and maintenance of drinking water, food safety, sewage disposal, vector control, solid-waste disposal, chemical/physical hazards, recreational and professional community service safety inspections, land use, and tobacco prevention.

BEGINNING THE *PACE EH* PROCESS

For Island County, an assessment team had already been in existence since 1992; the Community Health Advisory Board (CHAB) was established by the Board of Health to provide a community forum to assess the community's health concerns and needs, prioritize and recommend policy to address those concerns, and to assure that such policies attend to the community's needs. CHAB was further charged to address concerns in any area affecting health, including human health, environmental health, poverty, homelessness, joblessness, abuse, or any other concern impacting community well-being.

The *PACE EH* process in Island County differed from the model and the other pilot sites because the environmental health component was included in a broader community health assessment that was already underway. The 1994 Public Health Improvement Plan, approved by the legislature in Washington State, identified community assessment as a core public health function. Hence, the legislature provided local health jurisdictions with development funds to increase assessment capacity and required that a broad-based community assessment be conducted, followed by a health-assessment report.

Throughout the Public Health Improvement Plan, data-based decision-making was an objective of the community assessment. Additional objectives embedded in the legislation included community involvement, community partnerships, and community-based decision-making to improve local health. Island County decided to adopt a community-based health collaboration model developed by the Center for Health Improvement at the Missouri Department of Health and Senior Services as a framework for this assessment process. The model is based on the following four tenets: community involvement, community commitment, community control, and community benchmarks.

**FOR MORE INFORMATION: ISLAND COUNTY HEALTH DEPARTMENT
(360) 679-7350**

GENERATING AN ENVIRONMENTAL HEALTH ISSUE LIST

CHAB, after analyzing survey results from 17 community groups in 1995 and conducting extensive community outreach, identified six health issues (three environmental and three human health) as concerns in Island County. The top six community health issues were youth, domestic violence, alcohol use, tobacco, drinking water, and injury. Next, CHAB used its existing networks to reach out into the community for input and identified 35 local interest groups (e.g., city governments, chambers of commerce, and other organizations deemed as having “community connections”). CHAB members then gave data presentations about the six priority health issues to these groups and asked community members to complete a survey and select their top issues for action. More than 500 surveys were completed. A separate process on Camano Island resulted in more than 400 completed surveys from community members.

As another tactic for assessing community health on Camano Island, residents participated in a windshield survey. Eight survey teams, consisting of three or four persons each, drove to one of eight designated areas and answered subjective survey questions. The Camano Pilot Project Coalition crafted the survey categories and questions from seven healthy-community themes. The categories included:

- health-care access and health promotion;
- community centers;
- healthy rural environment;
- supporting our youth;
- transportation;
- local business clusters and services; and
- safety.

The results from the windshield survey served as a composite of subjective data collected through personal observations about people, their lifestyles, and the environment in which they live and work. Utilizing this approach, the windshield survey satisfied three objectives: to engage the community in the assessment process, to gather community information, and to have fun.

DEVELOPING INDICATORS

An initial health and risk indicator list (including personal, community, and environmental health indicators) was drafted by the health department’s epidemiologist, evaluated by the management team, and then presented to CHAB for review. Indicators were developed that reflected the following categories.

- Demographic
- Health status
- Unintentional injuries
- Infectious disease
- Mental health
- Environmental complaints
- Liquid waste
- Air quality
- Socio-economic
- Chronic disease
- Maternal and child health
- Crime and violence
- Suicide and substance abuse
- Drinking water quality
- Vector and zoonotic illness

These indicators, which were similar to those used by Washington State, were developed for a four-county regional health assessment and were tailored for the individual counties involved.

The department used the *PACE EH* indicator framework to explore two of the top six community health issues. They investigated alcohol concerns on Camano Island and worked with the Tobacco Coalition in Island County, finding it useful for community groups to gain a full understanding of the issues.

RANKING AND PRIORITIZING THE ISSUES

Island County developed a health prioritization worksheet. CHAB reviewed several prioritization models and selected 11 criteria for evaluating and comparing health issues (see text box). CHAB members conducted an exercise to weight the criteria as to their relative importance. After studying the results of the community survey and listening to six community experts describe specific issues and each issue's impact on health, CHAB began a prioritization exercise to identify the highest priorities for action.

PROPOSED CRITERIA FOR EVALUATING HEALTH ISSUES

- Greater problem than in state or nation
- Number of persons affected
- Health impact (hospitalizations/deaths)
- Quality of life
- Community support to address issue
- Effectiveness of available interventions
- Number of persons at risk
- Urgency of the issue (rapid rise, public concern, public risk)
- Preventability
- Actual or potential economic loss
- Political support to address issue

The community and CHAB decided not to include drinking water and tobacco in an action plan because so much focus had already been directed at these issues by several organizations. Alcohol use, domestic violence, and youth were selected as the top three priorities as determined by community survey and a prioritization process carried out by CHAB. The original intention was to create an action plan devoted to these three priorities; however, a discussion among CHAB members resulted in the conclusion that alcohol use and domestic violence should be incorporated as a "youth" problem.

CREATING AN ACTION PLAN

In January 1998, the theme of "supporting youth" emerged as the priority for action as a result of the ranking and prioritization process. CHAB approached the Mental Health and Substance Abuse Advisory Board and the Public Health and Safety Network about forming a coalition to support youth in the communities of Island County. A joint action plan was developed that involved coordination with the community health assessment team. Subsequently, the team executed the process again to engage more community members, focus on community support for youth, and develop "community imperatives" - defined as what must take place in communities to support youth and associated action plans.

At this stage, Island County primarily employed the *PACE EH* methodology laid out in the guidebook to organize much of their interaction with the community. The guidebook helped health department staff when structuring the activities of specific meetings. Because the project was not driven by health department staff and the health department had only a supporting role in Island County's implementation of *PACE EH*, the reiterative nature of the process was helpful.

Two to four community imperatives were identified in each geographic area of the county, for a total of 14 imperatives. Community members were assigned to each imperative to develop an action plan; more than 120 community members have participated in the development of the plan thus far.

CURRENT STATUS OF THE *PACE EH* PROJECT

Following Island County's involvement as a pilot site for the *PACE EH* methodology, only limited activity took place in the area of community-based environmental health assessment for several reasons, including lack of staffing and funding, lack of community infrastructure with the knowledge base and talents to engage communities in the work of *PACE EH*, and existing commitment to assessment and community-development work that took priority over conducting community-based assessments of environmental health. For instance, the Environmental Health Section of Island County Health Department already was involved in several technical assessment projects, many of which focused on water resources.

Recently, however, CHAB has established a high-level Environmental Health Steering Committee to start developing environmental programs and projects in Island County. The CHAB Environmental Health Steering Committee has been designated to develop a community-based environmental health project and seek funding for staffing and project implementation. The Steering Committee recommended to CHAB that they try to procure funding that would allow Island County Health Department and CHAB to engage in community-based environmental health processes using the *PACE EH* model. The Island County Health Department was awarded a grant from the National Center for Environmental Health, Centers for Disease Control and Prevention, which would provide them resources to engage local communities in environmental health assessment, prioritization, and activities. The Island County Environmental Health Initiative has now been developed, with the goal of engaging Island County Health Department staff and communities in the following three areas: developing new relationships with community stakeholders, expanding community understanding about the relationship between human health and the state of the environment, and redefining the leadership roles for public health officials and staff in environmental health. The CHAB Environmental Health Steering Committee is also committed to receiving additional assistance by applying for a CDC Fellow, who would also provide Island County with expertise to move the proposed project forward.

Concurrent with the actions of the CHAB Environmental Health Steering Committee, Island County Health Department staff also became better educated about the philosophy and methodology represented by the *PACE EH* model. Staff members are actively involved with the work of the CHAB Environmental Health Steering Committee and have supported the goals of the committee by writing grants, facilitating committee work, and seeking opportunities to become better educated about environmental health assessment and actions at the community level.

Island County is now ready to embark on the Island County Environmental Health Initiative. The outcomes of such an initiative will increase local community involvement in environmental health and advancement in the knowledge and technical skills of both health department staff and community members. By following the *PACE EH* methodology, Island County Health Department plans to be able to develop the departmental and community infrastructures that will allow the department to conduct a thorough *PACE EH* process entailing all 13 *PACE EH* tasks. By implementing the Island County EH Initiative, the health department hopes to achieve

- a thorough and well-documented decision-making and planning process;

- effective participation of a well-represented public throughout the process;
- an enhanced understanding of the community's environmental health needs;
- strengthened community support for the identification and prevention of environmental risks;
- an enhanced appreciation for the critical connections between human health and the environmental conditions;
- an appropriate and equitable distribution of environmental health programs and services directed to priority environmental health issues;
- a plan for action and evaluation measures that capitalize on the strengths of the community and Island County Health Department to improve the community's health; and
- the commencement of activities designated to help minimize or prevent environmental health issues and risks.

Island County will benefit from having an engaged, knowledgeable, committed public and from enhancing and preserving the County's existing natural resources and rich environmental assets. The health department anticipates having an increased capacity within the Department and Island County communities to understand and resolve environmental issues using science-based methodologies. Such increased local capacity will also provide state and federal policymakers the opportunity to review programs and policies developed locally and to develop state or national policy initiatives when appropriate.

LESSONS LEARNED

- Community process often takes longer than planned.
- Local groups are reluctant to follow a "national" or "state" process; they are likely to adapt it to suit their personalities, processes, and structures.
- Establishing community group infrastructure is important (i.e., having a leader/facilitator, membership committee, and steering committee).
- Hands-on activities (e.g., windshield surveys, peer surveys, community presentations, asset mapping, data collection, and assessment) engage the community.
- Early wins are important - do something early in the process and publicize it. Get folks involved!
- Keep policymakers informed about the process every step of the way.
- Do not reinvent the wheel. Instead, use, adapt, and translate materials others have found successful or partner with other health departments in the state or county.

PACE EH TOOLS AND DOCUMENTS USED BY ISLAND COUNTY HEALTH DEPARTMENT

- A. Community health process
- B. Facilitator role - training
- C. Assessment questionnaire
- D. Windshield survey questions
- E. Guidance for prioritizing community health issues (includes prioritization worksheet)
- F. Guidance for issue presentations
- G. Island County action plans - community imperatives
- H. CHART - Improving the Health of Missouri Communities

COMMUNITY HEALTH PROCESS**1. DEVELOPING A COMMUNITY COALITION (CHAB)**

- Secure sponsorship (ordinance from Commissioners)
- Identify and recruit CHAB members
- Define leadership structure
- Plan an approach
- Develop a time line

2. CREATING A SHARED VISION

- Define the community
- Describe community dynamics
- Create a shared vision of a healthy community
- Clarify community team members' roles and responsibilities
- Develop a communication plan

3. ASSESSING COMMUNITY HEALTH

- Identify health and risk indicators
- Review data sets
- Collect local data (e.g., from focus groups, surveys, and key informant interviews)
- Analyze and consolidate information
- Identify key health issues
- Publish a report

4. PRIORITIZING COMMUNITY HEALTH ISSUES

- Develop a plan to share the report with the community
- Develop criteria for issue evaluation
- Share the report and obtain response from community
 - identify key risk factors
 - identify community resource gaps
 - prioritize health issues
- Select issues to address
- Establish goals and objectives

5. IMPLEMENTING A COMMUNITY HEALTH PLAN

- Consolidate plans of local groups whose work addresses priority health issues
- Develop a community mobilization plan
- Implement plans
- Monitor progress
- Evaluate outcomes
- Publish a report

COMMUNITY HEALTH ADVISORY BOARD
MINI - TRAINING SESSION

SEPTEMBER 1998

THE FACILITATOR ROLE

WHAT THE FACILITATOR DOES:

- **Helps leader and members focus energy on the task and stay on track.**
- **Makes sure everyone has a chance to participate.**
- **Defends others from personal attack.**
- **Is a process advocate - makes suggestions about how to proceed.**
- **Makes sure everyone is doing the same thing, in the same way, at the same time - gets process agreements.**
- **Does not contribute ideas or evaluate group members' ideas.**

DOES CHAB HAVE A FACILITATOR? DO WE NEED A FACILITATOR?

Washington State
Environmental Health Director
Indicator SET

ASSESSMENT QUESTIONNAIRE
YEAR

Directions: The survey period is defined as the calendar year for the time frame of the survey. For example, the survey period for 1997 is January 1, 1997 through December 31, 1997. Point-in-time information is as of the last day of the survey period. For example, the population of your health jurisdiction would be as of December 31st of the survey period.

Questions in *italics* are optional. Please answer if the information is available.

General Information	Answer
What is the name of your health jurisdiction?	
Who is the contact person for this survey?	
What is the contact person's telephone number?	
What is the population of your health jurisdiction?	

Food Program Indicators	Answer
How many food service permits were issued for your health jurisdiction during the survey period? (Includes TFE's, schools, restaurants, etc.)	
What is the total number of routine inspections conducted during the survey period?	
What is the number of routine inspections where red item violations totaled over 35 or which had three or more high-risk items during the survey period?	
A confirmed foodborne outbreak is defined as two or more ill persons with epidemiological and/or laboratory evidence implementing a common food (including drinks). Based on this definition, how many confirmed foodborne outbreaks occurred in your health jurisdiction during the survey period. What is the total number of confirmed individual cases associated with all of these confirmed food borne outbreaks during the survey period?	
How many Food Handler (Food and Beverage) Cards were issued during the survey period?	
<i>How many Food Service Managers were trained in your health jurisdiction through manager courses during the survey period?</i>	

Liquid Waste	Answer
What is the total number of Liquid Waste permits issued during the survey period?	
A confirmed sewage-related illness is defined as an ill person with epidemiological and/or laboratory evidence implementing exposure to sewage either directly or indirectly as the source of the illness. Based on this definition, how many individual cases of sewage related illnesses occurred in your health jurisdiction during the survey period? (Some of these cases may also be reported in other areas such as drinking water if the original source is confirmed as sewage)	

Vector/Zoonotic	Answer
A confirmed vector-borne or zoonotic illness is defined as an ill person with epidemiologic and/or laboratory evidence implicating a vector or animal as the source of the illness. Based on this definition, how many individual cases of vector-borne and zoonotic illnesses occurred in your health jurisdiction during the survey period?	

Water Recreation	Answer
Does your health jurisdiction contract the water recreation program with the State? If no, please skip to next section - Group A Drinking Water. What is the total number of Water Recreation permits issued during the survey period?	
<i>What is the number of drownings and near drownings in your health jurisdiction during the survey period? (Included natural and artificial water bodies)</i>	
A confirmed water recreational illness is defined as an ill person with epidemiologic and/or laboratory evidence implicating contact with water for recreational purposes as the source of the illness. Based on this definition, how many individual cases of water recreational illness occurred in your health jurisdiction during the survey period?	
<i>How many injuries occurred in your health jurisdiction, which were associated with water recreational facilities during the survey period?</i>	

Group A Drinking Water	Answer
Does your health jurisdiction contract with the State for the Group A Drinking water program? If no, please skip to the next section - Group B Drinking Water.	
What is the number of Group A drinking water systems in your health jurisdiction?	
What is the population in your health jurisdiction served by these Group A drinking water systems?	
What is the number of Group A drinking water systems, which were out of compliance with bacteriological water quality requirements during the survey period?	
What is the number of Group A drinking water systems, which were out of compliance with chemical water quality requirements during the survey period?	

Group B Drinking Water	Answer
Does your health jurisdiction contract with the State for the Group A Drinking water program? If no, please skip to the next section - General Drinking Water.	
What is the number of Group B drinking water systems in your health jurisdiction?	
What is the population in your health jurisdiction served by these Group B drinking water systems?	
What is the number of Group B drinking water systems, which were out of compliance with bacteriological water quality requirements during the survey period?	
What is the number of Group A drinking water systems, which were out of compliance with chemical water quality requirements during the survey period?	

General Drinking Water**Answer**

A confirmed water borne illness is defined as an ill person with epidemiologic and/or laboratory evidence implicating drinking water as the source of the illness. Based on this definition, how many individual cases of water borne illness occurred in your health jurisdiction during the survey period?

D

AN ENVIRONMENTAL PROFILE OF THE COMMUNITY: WINDSHIELD SURVEY

- I. LOCATION
 - A. Boundary of the community
 1. Where is the community located?
 2. What is its boundary?
 3. Is it part of a larger community?
 4. What smaller communities does it include?
 5. How is it labeled and defined by its constituents?
 - B. Geographic features
 1. What major land forms are in or near the community?
 2. What geographic features pose possible threat?
 3. What geographic features offer opportunities for healthful activities?
 4. How much open space is there? What is the quality of the space? Is the open space public or private? Used by whom? Are open spaces available for recreation?
 - C. Climate
 1. What is average temperature and precipitation?
 2. What are extremes?
 3. What climatic features affect health and illness?
 - D. Flora and fauna
 1. What plants and animals pose a possible threat to health?
 - E. Human-made environment
 1. What are the major industries? Work and occupational hazards?
 2. How has air, land, and water been affected by humans? What are other environmental hazards, such as radiation and noise?
 3. What is the quality of sanitation and protection services (fire and police) in the community?
 - F. Neighborhood
 1. What is the composition of the dwellings in the neighborhood?
 2. What are the neighborhood hangouts?
- II. RESOURCES AND SERVICES
 - A. Transportation
 1. How do people get in and out of the neighborhood? Car, bus, bike, walk, etc.? Are the streets and roads conducive to good transportation and also to community life? Are the streets safe for commuting? Is there a major highway near the neighborhood? Whom does it serve? How frequent is public transportation available?
 - B. Service Centers
 1. What services are available for residents, such as social agencies, Clinics, recreation centers, schools? How easy or difficult is it to access these services? Are they co-located in the neighborhood? Are there offices of doctors, dentists, and alternative therapists? What emergency services are available?
 - C. Major institutions and businesses
 1. What major institutions and businesses are located in the community? What are their contributions to the employment of residents?
 - D. Stores
 1. Where do residents shop? Shopping centers, neighborhood stores? How do they travel to shop?
- III. COMMUNITY LIFE
 - A. Who are the people on the streets during the observation? Age, gender?

Adapted from:

Anderson, Elizabeth T. and McFartan, Judith M. (1988). Community as client. Philadelphia: J.B. Lippincott. (Originally adapted from Madison. Terry Mizrahi. School of Social Work. Virginia Commonwealth University).

Soradley, Barbara W. (1985). Community health nursing (2nd ed.). Boston: Little, Brown & Company

CAMANO ISLAND WINDSHIELD SURVEY

1. HEALTHCARE ACCESS AND PROMOTION: traditional, alternative, prevention
 - a) What kinds of health care services do you see?
 - b) What evidence do you see of alcohol and drug use? e.g. litter, advertising, needles?
 - c) What evidence of smoking do you see? E.g. in cars, out of doors, in groups?
 - d) What evidence is there of health promotion activities? E.g. safe sex, stop smoking, health screenings?

2. COMMUNITY CENTERS: gathering
 - a) Where are people gathering? What are people doing?
 - b) Do you see evidence of ethnic diversity?
 - c) What neighborhood hangouts do you see?
 - d) Do you see evidence of local artwork?
 - e) What places do you see where people might gather?

3. HEALTHY RURAL ENVIRONMENT: quality
 - a) What types of open space do you see?
 - b) What evidence do you see that open spaces are used for recreation?
 - c) What type of wildlife do you see?
 - d) What evidence do you see for business, industrial, and/or residential development?
 - e) What evidence of environmental hazards and/or pollution do you see?

4. SUPPORTING OUR YOUTH: how
 - a) What types of intergenerational interactions do you see?
 - b) What types of outdoor activities are youth involved in?
 - c) Do you see evidence of youth group activities?
 - d) What evidence of church group activities do you see?

5. TRANSPORTATION: public, private
 - a) How do people get in and out of the neighborhood?
 - b) Is there evidence of public transportation usage?
 - c) Are the roads well maintained?
 - d) Do you see evidence of traffic congestion?

6. LOCAL BUSINESS CLUSTERS/SERVICES: buying, selling
 - a) Where do the residents shop?
 - b) What type of businesses or business clusters do you see?
 - c) Are they by themselves (individual) or clustered together?
 - d) Do you see evidence of new businesses opening or under construction?

7. SAFETY: protection, public, private
 - a) Do you see fire/police stations or evidence of their presence?
 - b) Who do you see on the street?
 - c) Do you see evidence of community safety programs or networks?

CAMANO ISLAND COMMUNITY MOBILIZATION PILOT PROJECT

SUMMARY - WINDSHIELD SURVEY

MARCH 15TH, 1997

INTRODUCTION

On March 15th, 1997 from 9 AM to 12-30 PM, twenty-eight (28) Camano island residents participated in a Windshield Survey exercise. Eight survey teams, consisting of three or four persons each, drove one of eight designated areas and answered the Windshield Survey questions.

The survey categories and questions were crafted from seven healthy community themes which the Camano Pilot Project Coalition had envisioned at their kickoff retreat in November 1996.

The Survey categories included:

- a) healthcare access and health promotion;
- b) community centers;
- c) healthy rural environment;
- d) supporting our youth;
- e) transportation;
- f) local business clusters and services; and,
- g) safety

The following is a summary of what the survey teams observed and reported on this snowy Saturday morning in March.

HEALTHCARE ACCESS AND HEALTH PROMOTION

Minimal health care services were available; no health promotion activities were noted; and, no allopathic or naturopathic services are available at this time. Alcohol use was evidenced by litter of beer and liquor containers in all eight (8) geographic areas.

COMMUNITY CENTERS

There was minimal evidence of people gathering on this morning and no ethnic diversity noted. Areas identified as potential community gathering centers/places are single, private, or public locations/businesses. There is no community designated, multi-use, intergenerational community center. Home based artwork was prevalent.

HEALTHY RURAL ENVIRONMENT

Environmental observations included large open undeveloped areas of wet lands, ponds, lakes, beaches, and forests rich with wildlife as well as developed open spaces including inland farms and pastures. Open spaces were observed as available for recreation. There is strong evidence of residential development on Camano. Less noticeable was evidence of business development, and no evidence of industrial development. A variety of environmental hazards for water were noted: agricultural run-off, construction run-off, erosion, standing water, aging water storage tanks, aging and suspected over use of septic systems. Litter and illegal dumping were noted to be prevalent throughout the island.

SUPPORTING OUR YOUTH

Outside of a small number of families with young children noted in cars, and possible gathering of a few youth on a narrow, shoulder-less road, no youth activities were noted. Potential community resources for youth activities were identified with churches being the most prominent.

TRANSPORTATION

Two important transportation observations were noted:

- a) no bus stops, shelters or signs were noted inviting use of the public transportation system, and;
- b) although the county roads were noted to be generally well maintained, the roads, especially on the south end of the island were found to be narrow with minimal or non-existent shoulders.

LOCAL BUSINESS CLUSTERS

Many types of business/services available on Camano Island were noted to be home based, Quite varied, and more numerous than had been assumed/expected. One third of the Home/Island based business noted were oriented towards providing development/construction services.

SAFETY

There was minimal noting of neighborhood watch programs, emergency access abilities, road signage and phone booths on the south end of the island.

PRIORITIZING COMMUNITY HEALTH ISSUES (ORIENTATION OF CHAB TO PRIORITIZATION)



- A. Why do we prioritize health issues?** (rationale)
- limited resources in communities
 - want to direct resources to the highest priorities
 - want a systematic way to establish priorities
- B. How do we prioritize health issues?** (Process)
- a well-defined procedure to mathematically score key health issues
 - each issue is rated against a standard set of criteria
 - the criteria will be weighted by CHAB to determine relative importance of each criteria
 - this allows us to establish a priority level for each issue
 - this allows us to compare issues against each other
- C. Proposed Criteria for Evaluating Health Issues** (see attached definitions)
- Greater problem than in state or nation
 - Number of persons at risk
 - Number of persons affected
 - Urgency of the issue (e.g., rapid rise, public concern, and public risk)
 - Health impact (hospitalization/deaths)
 - Preventability
 - Quality of life
 - Actual or potential economic loss
 - Community support to address issue
 - Political support to address issue
 - Effectiveness of available interventions
- D. Weighting the Criteria**
- To establish relative importance (weight) of each criteria, CHAB members will rate each on a scale 1-5
 - CHAB members will represent their “community connections” when they complete this exercise
 - Priority committee will compute a “weighted average” for each of the criteria (for example, urgency of the problem might be weighted twice that of size of the problem)

The weighted list of criteria will be used by CHAB to evaluate the key health concerns that arise out of the Health Report. This will result in a prioritized list of health issues for Island County (and sub-county regions).

A community health plan will be developed and implemented by CHAB and other community partners around the top priority issues.

HEALTH ISSUE PRIORITIZATION WORKSHEET**INJURY****CRITERIA RATING SCORE**

CHAB Member: Circle 1, 2, or 3 for each criteria

CALCULATING WEIGHT

Staff will calculate & score

Greater Problem in the Community

1-compared to the state or nation, issue is less prevalent in Island Co.	1 x 9.1% = 9.1
2-compared to the state or nation, issue is to Island County	2 x 9.1% = 18.2
3-compared to the state or nation, issue is more prevalent in Island County	3 x 9.1 = 27.3

Number of Persons at Risk

1-less than 1% of the population is at risk (710 people)	1 x 9.9% = 9.9
2-1-25% of the population is at risk (711 - 17,150 people)	2 x 9.9% = 19.8
3-26- 100% of the population is affected (17,151 - 71,000 people)	3 x 9.9% = 29.7

Number of Persons Currently Affected

1-less than 1% of the population is at risk (710 people)	1 x 9.7% = 10
2-1- 25% of the population is at risk (711 - 17,150 people)	2 x 9.7% = 19.4
3-26- 100% of the population is affected (17,151 - 71,000 people)	3 x 9.7% = 29.1

Urgency of the Issue

1-little change in issue over time, low public concern, low public risk	1 x 10% = 10
2-issue increasing, moderate public concern, possible risk to community	2 x 10% = 20
3-rapidly rising issue, public concern is high, some risk to public	3 x 10% = 30

Health Impact

1-minimal health related impact	1 x 9.6% = 9.6
2-hospitalization or short term disability is common	2 x 9.6% = 19.2
3-death or long term disability is common	3 x 9.6% = 28.8

Quality of Life

1-affected individuals & their families are able to function normally	1 x 8.7% = 8.7
2-affected individuals & their families have some limitation in function	2 x 8.7% = 17.4
3-affected individuals & their families are not able to perform daily functions	3 x 8.7% = 26.1

Actual or Potential Economic Loss

1-the community &/or family are not significantly negatively financially impacted	1 x 7.6% = 7.6
2-the community &/or family may bear a short term financial burden	2 x 7.6% = 15.2
3-the community &/or family may bear a long term financial burden	3 x 7.6% = 22.8

Community Support to Address the Issue

1-community ranks this issue as a lower priority	1 x 9.4% = 9.4
2-community ranks this issue as a medium priority	2 x 9.4% = 18.4
3-community ranks this issue as a high priority	3 x 9.4% = 28.2

Political Support to Address Issue

1-policy makers tend to be negative toward issue	1 x 6.9% = 6.9
2-policy makers tend to be divided or neutral toward issue	2 x 6.9% = 13.8
3-policy makers are generally favorable toward issue	3 x 6.9% = 20.7

Preventability

1-issue cannot be reduced before it is a problem	1 x 9.5% = 9.5
2-issue can be slightly reduced (detected and avoided)	2 x 9.5% = 19.0
3-issue can be reduced significantly (prevented)	3 x 9.5% = 28.5

Effectiveness of Available Interventions

1-causes of issues are not well understood, interventions are ineffective	1 x 9.8% = 9.8
2-interventions are moderately effective	2 x 9.8% = 19.8
3-very effective interventions are available	3 x 9.8% = 29.4

TOTAL SCORE _____

COMMUNITY HEALTH ADVISORY BOARD**ISSUE PRESENTATIONS****CHAB MEETINGS
AUGUST & SEPTEMBER 1997**

QUESTION: How will we establish priorities among our 6 health issues?

ANSWER: We will ask 500 community members what they think AND we will ask community experts to tell us about the issues in

"ISSUE PRESENTATIONS"

The August and September meetings are very important.
We will have 6 community experts tell us about
our six issues from their professional point of view.

This will provide us with the information we need to go through our
prioritization exercise at our

October RetreatExperts will:

- Review and Comment of the data
- Discuss what is currently being done to address the issue
- Identify successful interventions
- Describe realistic goals and actual possible outcomes
- Tell us why this issue should be a priority in Island County in 1998

AUGUST 21, 1997

INJURY: Health Dept. Injury Prevention Specialist
TOBACCO: Health Dept. Tobacco Prevention Specialist
YOUTH: Public Health & Safety Network

SEPTEMBER 1997

ALCOHOL: speaker to be determined
DRINKING WATER: Environmental Health Director
DOMESTIC VIOLENCE: speaker to be determined

SO, DON'T MISS THESE IMPORTANT MEETINGS!



**Island County Youth and Family Partnerships
Community Imperatives**

**Geographic Area: Imperative # & Statement
Imperative Group Members:**

What do we want to accomplish?	Why is it important?	How are we going to do it?	Who are our partners? What are our resources?	When will we complete it?	How will we measure our progress toward our goal? SHORT TERM	How will we measure or progress toward our goal? LONG TERM
Write a goal statement here.	Write the long term values that support the goal; external and internal assets from the SEARCH Model or other similar values/behaviors	List your activities here: line them up with the long term values/behaviors they support in column 2	List partners and resources for each activity in column 3	Enter projected dates for completion of each activity in column 3	Write progress measures for each activity in column 3	Write outcome measures for each value/behavior listed in column 2

Example

North Whidbey #3: We must have in-home preventive services for pregnant women, infants and children up to age five.

Committee Members: Roger Case, Mickie Nowlin, Carrie McLachlan, Carol McNeil

What do we want to accomplish?	Why is it important?	How are we going to do it?	Who are our partners? What are our resources?	When will we complete it?	How will we measure our progress toward our goal? SHORT TERM	How will we measure or progress toward our goal? LONG TERM
Comprehensive home and center-based preventive service program for pregnant women, their infants and children up to age 2	improve health and development Improve parenting skills Reduce child abuse and neglect	Develop program Secure funding Conduct Training Coordinate resources Conduct home visits Conduct center prog	RTL, HD, ICC, CN, HD, Foundations, Cal-Safe HD, CN, ICC, WGH HD, RTL, HS Toddler Prog,	May 1999 August 1999 September 1999 August 1999 October 99-Dec 02 October 99-Dec 02	Grant Ap completed Program Funded # people trained, curricu Meeting Notes # families served, # visits # families served, # days	80% Well child exams up to date 90% immunizations up to date 80% Development is age appropriate via? tool NCAST scores appropriate No CPS reports No reported DV

**Island County Youth and Family Partnerships
(New and Existing Groups)
Community Imperatives**

Imperative: Central Whidbey: We must have intergenerational activities.

Imperative Group Members: Del Bennett, Nancy Conard, Larry Cort, Fran Einterz, George Hammett, Katherine McGee, Kathy McLaughlin, Brian Montana, Linnane O’Conner, Roberta Piercy, Klye Roethle, Peg Tenant, Janet Wodjenski

What do we want to accomplish?	Why is it important?	How are we going to do it?	Who are our partners? What are our resources?	When will we complete it?	How will we measure our progress toward our goal? SHORT TERM	How will we measure or progress toward our goal? LONG TERM
Children's Day Event October 1998	<p>1-Provides opportunity for seniors, adults, youth and children to work and play together while they celebrate children.</p> <p>2-Demonstrates community support of youth and children.</p> <p>3-Provides positive adult role models, provides meaningful community activities for youth and the opportunity to assume responsibility.</p>	<p>1-Plan the event.</p> <p>2-Secure funding.</p> <p>3-Publicize the event.</p> <p>4-Hold the event.</p>	<p>1-Island County/Stanwood Community Network Board, 6:30 Group</p> <p>2-Community Network Board, Washington Coalition for the Prevention of Child Abuse and Neglect</p> <p>3-6:30 group, Big Brothers/Sisters of Island County, Coupeville Farmer's Market, Central Whidbey Youth Coalition</p> <p>4-6:30 Group, Coupeville Farmer's Market, Community Network Board, Big Brothers/Sisters, Town of Coupeville, Coupeville High School Chapter of the National Honor Society</p>	<p>1-September 1998</p> <p>2-September 1998</p> <p>3-September-October 1998</p> <p>4-October 10, 1998</p>	<p>1-Event planned, tasks assigned, volunteers confirmed</p> <p>2-\$1500 funding secured</p> <p>3-Posters created & distributed, press releases distributed</p> <p>4-Event held</p>	<p>1-Increase in the % of youth who report feeling valued by the community.</p> <p>2-Increase in the % of youth who report having support from three or more non-parent adults.</p>



Island County Youth and Family Partnerships
(New and Existing Groups)
Community Imperatives

Imperative: Central Whidbey: We must have intergenerational activities.

Imperative Group Members: Del Bennett, Nancy Conard, Larry Cort, Fran Einterz, George Hammett, Katherine McGee, Kathy McLaughlin, Brian Montana, Linnane O'Conner, Roberta Piercy, Kiye Roethle, Peg Tenant, Janet Wodjenski

<p>Create and fill a Community Organization Position</p>	<p>Many community activities and events occur that are not well coordinated or publicized. Strong community connections between seniors, adults, youth and children build mutual respect and create the kind of environment we want to live in.</p>	<p>1-Develop a job description 2-Develop an operating budget 3-Develop a Solicitation Plan 4-Locate a community organization to sponsor the position 5-Secure the 3 year funding pledges via the Funding Solicitation Plan 6-Fill the position</p>	<p>1&2 Central Whidbey Youth Coalition, the Town of Coupeville, Island County/Stanwood Community Network Board, 6:30 Group 3-6:30 Group 4-Central Whidbey Youth Coalition, 6:30 Group 5-6:30 Group 6-Central Whidbey Youth Coalition, 6:30 Group</p>	<p>1-October 98 2-October 98 3-July 99 4-July 99 5-December 99 6-January 2000</p>	<p>1-Written job description 2-Budget document 3-Written plan 4-Partnership Agreement 5-\$20,000 Pledges secured 6-Person hired</p>	<p>1-Increase in the % of youth who spend 3 hours or more a week in lessons or practice of music, theater, or other arts. 2-Increase in the % of youth who spend 3 hours or more a week in sports, clubs, or organizations at school and/or in community organizations Baseline 1998 survey.</p>
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PUBLIC HEALTH

IMPROVING THE HEALTH OF MISSOURI COMMUNITIES:

A Process Approach

Suzanne Stafford-Alewine, CHART Director
Missouri Department of Health

"As the 21st century approaches, Missouri's health care system is becoming dramatically different in the way it is financed, organized, and delivered. Significant scientific and technologic advances in the treatment of disease as well as governmental and market-driven health care reforms aimed at reducing costs, improving quality, and ensuring greater access to care for all segments of the population, have already occurred. Shifting into a population-based community health orientation, health care delivery systems are now soliciting community participation in identifying unique needs and priorities. Thus, the community serves an integral function in advising these organizations on how to create systems that deliver the appropriate kinds of health and social services for their community." (Williams & McCleary, 1997)

In response to the changing face of the health care system, the Missouri Department of Health and its statewide partners have collaborated to provide assistance to communities. This collaboration resulted in the development of the Community Health Assessment Resources Team (CHART), whose mission is to improve the health of Missourians. CHART assists communities in the assessment of their unique health needs and the development of community health strategies that are based upon that assessment. Such strategies allow communities to shift the focus from responding to acute crises to creating systems that plan for health, promote healthy behaviors, and provide services that are appropriate for their needs. The CHART process, established in July 1994, is built upon four tenets:

1. community involvement;
2. community commitment;
3. community control;
4. community benchmarks.

These tenets form the foundation of successful community initiatives statewide.

COMMUNITY INVOLVEMENT

Community involvement is the first cornerstone upon which CHART is built. Since CHART's inception, the number of communities participating in the process has grown from 10 in July 1995, to nearly 70 in October 1997. The process is being actively used in nearly 100 Missouri counties. Staff at the Missouri Department of Health and the Missouri Hospital Association actively supports these coalitions through the provision of technical assistance, training and education programs, data and resource materials, and as a focal point for establishing linkages with other coalitions addressing similar issues. In addition, the state partners are examining a recently completed evaluation of the CHART process to determine the best methods for supporting these community initiatives into the next century.

COMMUNITY COMMITMENT

The second cornerstone to the CHART process is community commitment. This commitment must be achieved if improved health status is to be attained. Through the development of broad-based coalitions, community commitment to the process for the long term is assured. With the assistance of the CHART partnership, Missouri communities have demonstrated the importance of becoming involved in this process. Community leaders have broadened perspectives about the definition of health to include not only physical health, but also the mental, social, religious, education, and safety aspects that impact quality of life. To ensure the continual development of community leaders, the CHART partners developed the Institute for Community Health Leadership. Organized as a resource for coalition leadership teams to receive intensive training around the CHART process, the Institute will graduate 77 Fellows in November 1997, and continues training

for 50 new Fellows into Spring 1998. A new Fellowship class will begin in March 1998, with an anticipated enrollment of 50.

COMMUNITY CONTROL

Community control is the third cornerstone of the CHART process. In these times of placing decision-making power back into the hands of individual communities, their ability to impact decision-makers at the state and federal levels is greatly enhanced. Through local control and leadership, success is achieved, the best possible strategies for improving quality of life are developed, and community initiatives demonstrate tremendous success. Missouri communities are arriving at a point in the process that necessitates the development of community-based solutions to issues identified in the assessment phase. Communities face unique challenges in transforming their goals and objectives into comprehensive strategies. A vast resource bank of already developed and formally evaluated intervention programs exists, and communities are requesting technical assistance in identifying models most appropriate for their particular situation. The CHART partners are committed to assisting Missouri communities in identifying these best practices, and in guiding them toward resources that can be accessed for implementing community-based solutions.

COMMUNITY BENCHMARKING

Benchmarking is the final cornerstone of the process. In order to measure success, communities must establish goals and engage partners in the community planning process. Coalitions are developing methods for establishing and attaining community goals. While data may not completely validate these methods and initiatives for a number of years, the fact that communities believe in the process is an indication that long-term improvement will be achieved. The Missouri Department of Health is committed to providing communities with the best data possible for supporting their efforts. New methods of providing data communities are continually being developed, and the Department has implemented an extensive Internet site that provides county level data for many health status indicators. The CHART staff and state partners provide technical assistance to the community in establishing benchmark indicators, and in obtaining follow-up data for measuring the effectiveness of implemented programs.

SUMMARY

It is important to note that while many states have communities involved in CHART, few, if any, offer a team of professionals to support these initiatives, and none have a statewide partnership that is as committed to the process as Missouri does. The relationship between the key partner organizations is a unique phenomenon, and is certainly a key to success factor for the process. CHART is an active member of the Coalition for Healthier Cities and Communities, a national network that exists as a multi-sector partnership to service the widespread communities movement in the U.S. The Coalition serves as both a link to resources, and as a voice for communities nationwide.

CHART is an innovative approach to empowered community development. It provides communities the opportunity to participate in the process of change. The CHART process provides a vehicle for communities to take charge of the future, to determine locally how issues are addressed, and to set a course that assures improved health, quality of life, and sustainable community systems for the 21st century.

References

- Dempsey M, *Managing the Journey of Change: Assisting Communities in Assessing and Improving Community Health Status 1995.*
- Williams ES, McCleary KJ, *Community Health Assessment Resource Team Effectiveness: A Preliminary Statewide Evaluation of the Organization and Management of Missouri Community Initiatives 1997.*

DEMOGRAPHICS

In 1859, the first rail line was built into Cedar Rapids, a city located in Linn County. Several other lines were extended into the county in the 1860s. The railroads played an important role in establishing Cedar Rapids and Linn County as a center of commerce in eastern Iowa. The county enjoys continued prosperity (e.g., an excellent transportation system, a strong commercial base, a healthy job market, and a sound economy) yet still maintains the rural flavor of its roots.

According to the 1990 census, approximately 170,000 people resided in the county that year. Linn County was the second most populous county in the State, having experienced an approximate growth rate of 0.15% since 1970. By the year 2015, it is estimated the growth rate will increase to nearly 0.67%, resulting in a population nearing 200,000.

Surprisingly, the most common occupations for Linn County are not associated with farming, which ranked number 10. The top three common occupations in the County include services (32,000), manufacturing (23,000), and retail (20,000).

LINN COUNTY PUBLIC HEALTH

In 1996, Linn County Public Health (LCPH) employed 38 staff members and had a budget of \$2.2 million. Typically, counties in Iowa have a dual purpose: providing state services and determining local service needs. Counties originally existed to carry out state functions at the local level, resulting in grassroots-level county governments. In addition to performing state services, counties have voluntarily funded other local programs to benefit their residents (e.g., conservation areas and public libraries).

BEGINNING THE *PACE EH* PROCESS

Initially, the health department had hoped that the *PACE EH* process would develop concurrently with a county-wide public health survey, and thus each would benefit from the progress of the other. Unfortunately, the timing of the two initiatives did not coincide. Linn County was, however, able to form a core steering committee by tapping into an existing group of individuals and stakeholders (the “Healthy Linn 2000” committee) who were already familiar with environmental health issues.

Once the steering committee was formed, additional groups and stakeholders (e.g., the general public and local organizations including Farm Bureau, the Home Builders Association, and local unions) were invited to participate as members of the full assessment team. However, final decisions were made by the local Board of Health and Board of Supervisors.

Together, the health department, the steering committee, and the other assessment-team members revisited issue lists generated by the department, mostly by eliminating issues deemed non-priorities and adding other priority concerns. They then worked with the *PACE EH* indicator framework and decided to divide the assessment team into six sub-categories to develop indicators for each of the six topic areas: air quality, water quality, land use, waste management and hazardous materials, food safety, and general environmental issues.

**FOR MORE INFORMATION: LINN COUNTY PUBLIC HEALTH
(319) 892-6000**

In addition to input from the Steering Committee, health department staff also made essential contributions in the implementation of the *PACE EH* process. One drawback of this crucial staff input, however, was the possible limitation of public input in issue selection. Most of the team members drew on their own expertise and were influenced by their own agendas and priorities. Many of the issues receiving lower priority were those that members felt were within the department's purview. In other words, if team members felt an issue was currently being addressed under health department programs, it was not likely to be chosen as an important issue for future indicator development, ranking, and action. The limited public input regarding priorities and values became more problematic as the process progressed because of participant attrition. Ultimately, a small core group representing the steering committee and the agency staff remained involved and took responsibility for the project.

PROJECT STATUS

Currently, the *PACE EH* process is stalled at the indicators development stage. However, the impact of the project remains significant as it serves as a forum for diverse components of the community to discuss common environmental issues and advise the Board of Health. A renewed membership initiative is in progress for the advisory committee.

ADVICE FOR FUTURE USERS

To be implemented successfully, the *PACE EH* process requires that experienced staff members dedicate substantial amounts of time to the facilitation of stakeholders meetings and to drafting appropriate indicators. *PACE EH* is a valuable tool that should be supported by local boards of health and eventually become incorporated into schools of public health.

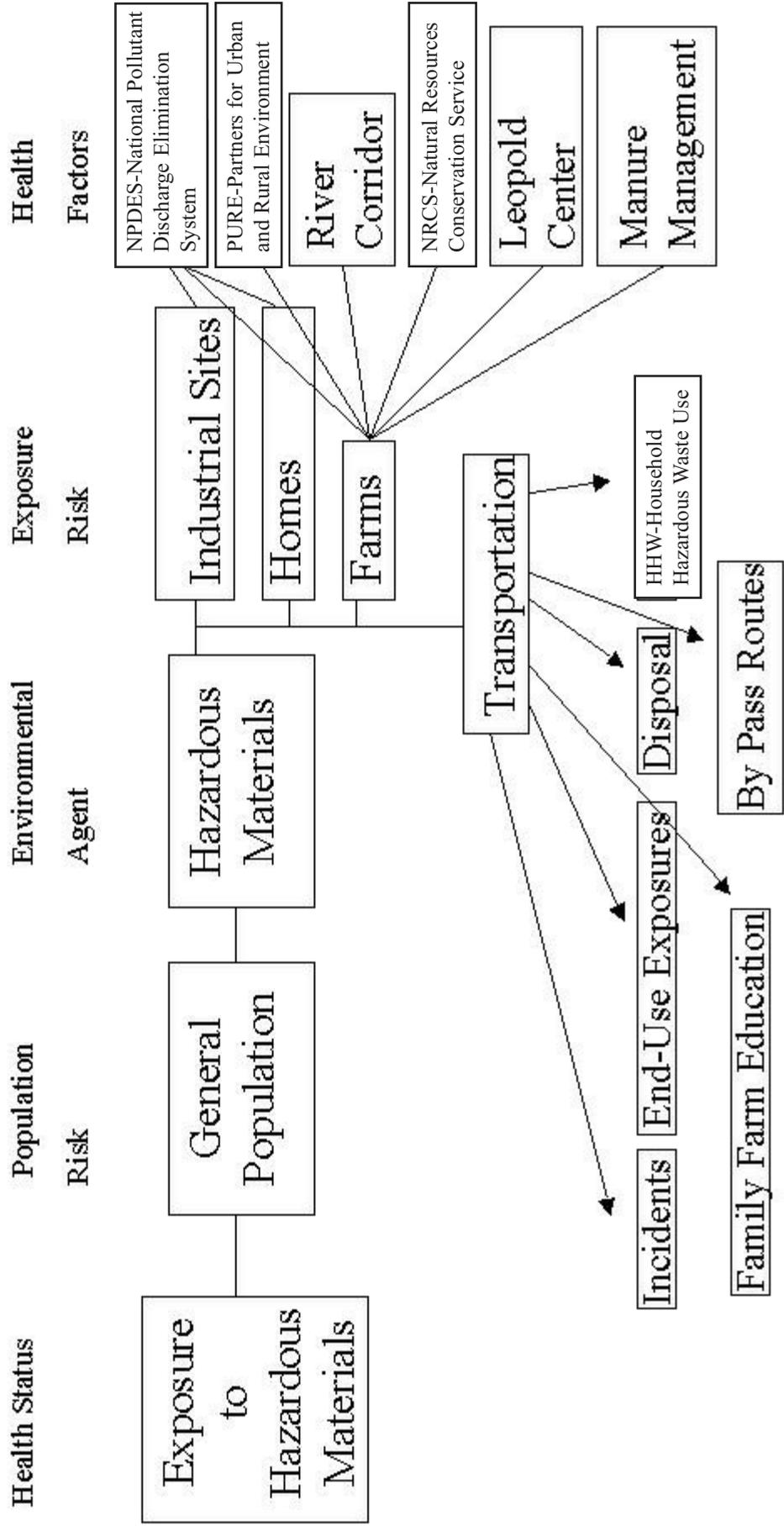
***PACE EH* TOOLS AND MATERIALS USED BY LINN COUNTY**

- A. Linn County *PACE EH* Participants**
- B. Index Factors for land use, hazardous waste and materials, waste tires, septic systems, and manure management**
- C. Prioritized issues for air quality and land use**

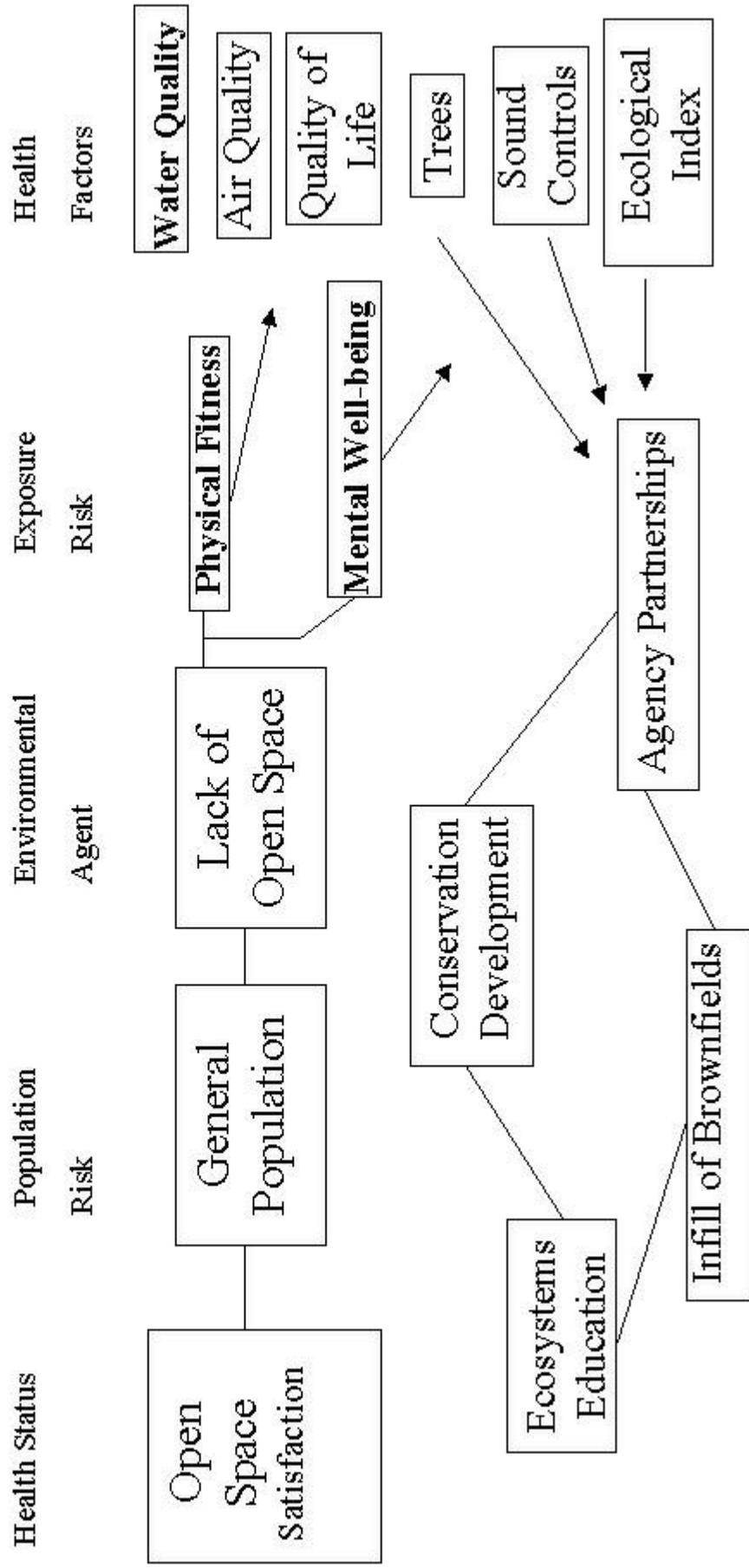
LINN COUNTY PACE EH PARTICIPANTS

Rural Development Specialist
League of Women Voters
Solid Waste Planner
Extension Educator
Environmental Educator
Wild Life Rehabilitator
Professor of Economics
Animal Control Officer
Recycling Coordinator
Trout Fisherman
Iowa Radon Coalition
Professor of Animal Care
Renewable Energy Specialist
Engineer
Linn County Conservation
Education Specialist
League of Women Voters
Wastewater Specialist
Solid Waste Director
Environmental Advocate
Industrial Safety Specialist
Environmental Consultant
Realtor
Board of Health Member
Farmer / Pork Producer
Science Teacher Retired
Onsite Septic Contractor
Water Utility Director
Planning Coordinator
Nature Center Director
Garden Club Chairperson
Vegetation Mgmt. Specialist
Science Professor
Health Care Network Director
Air Pollution Control Officer
Commissioner of Parks
Emergency Mgmt. Director

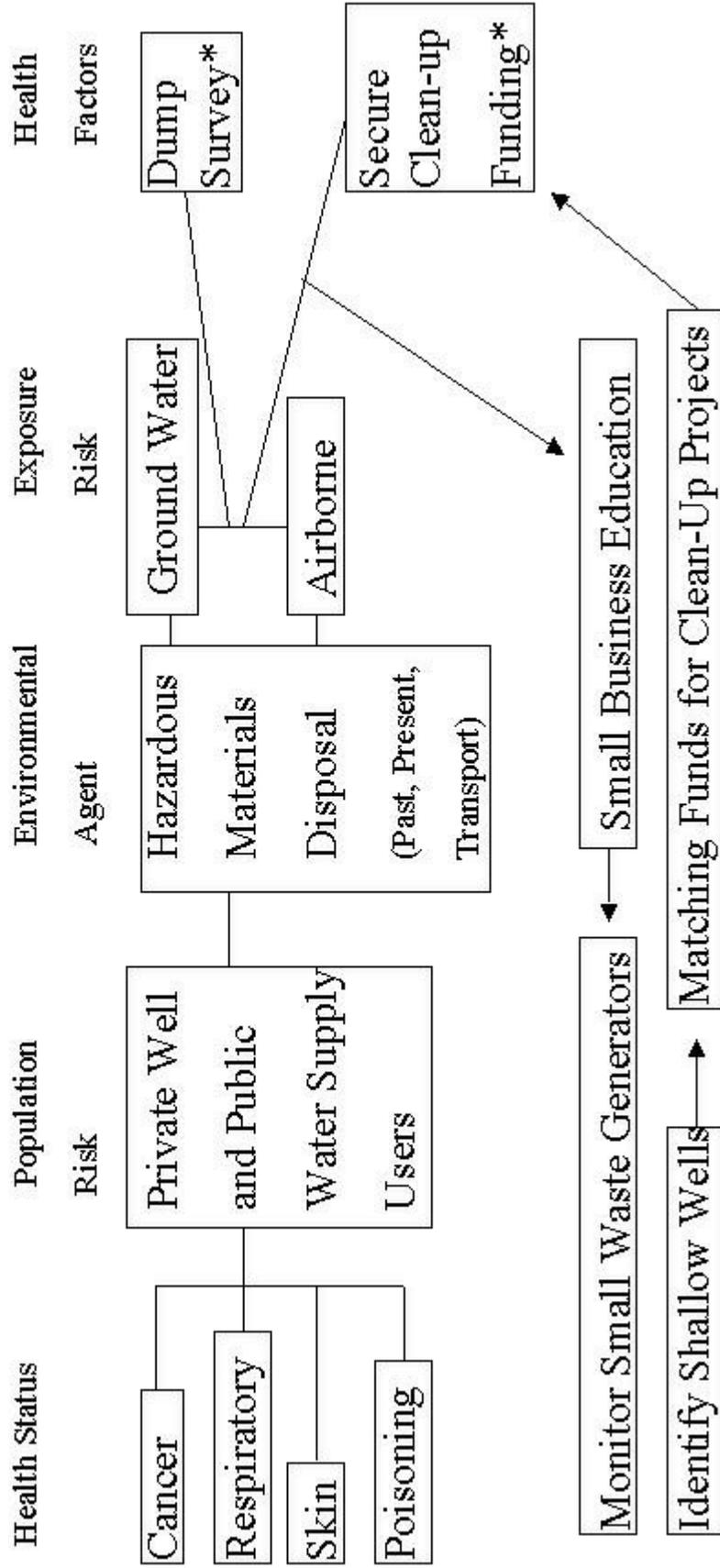
Land Use Index Factors



Land Use Index Factors

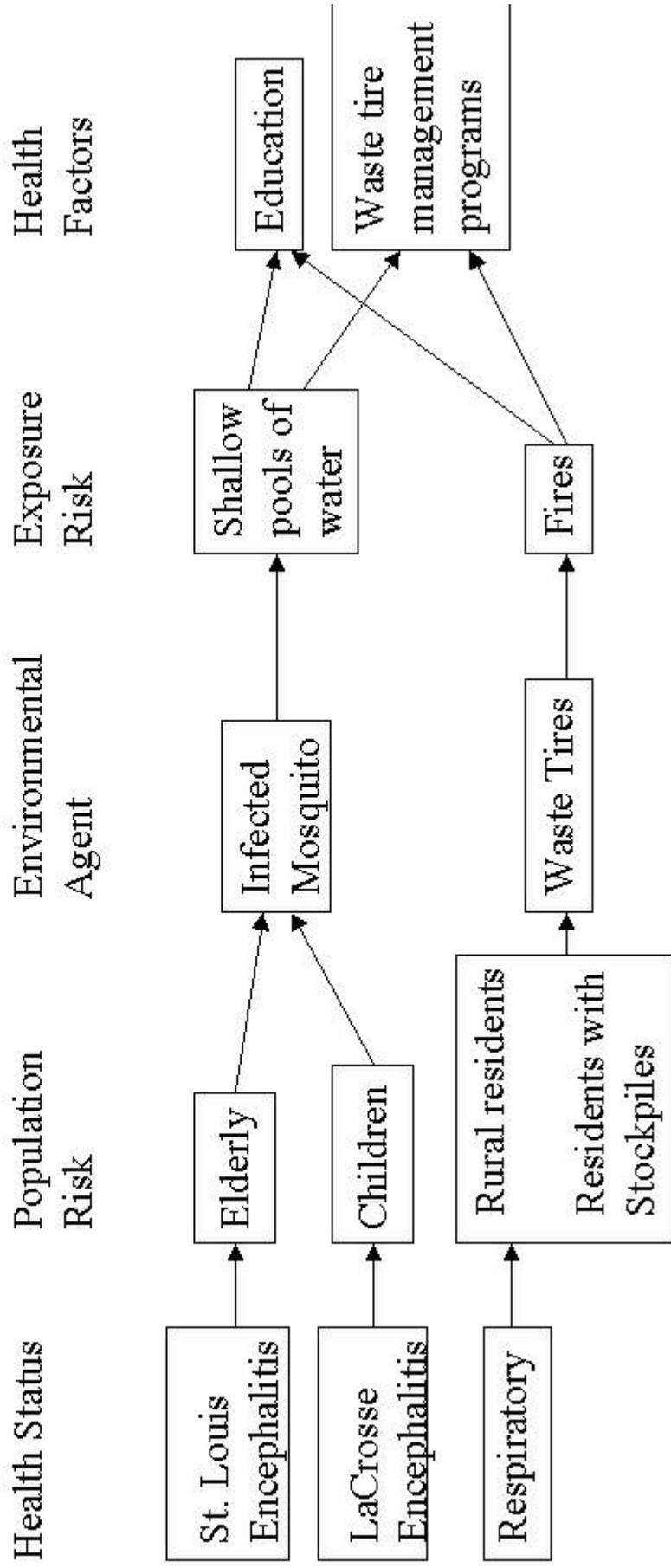


Hazardous Waste and Hazardous Materials

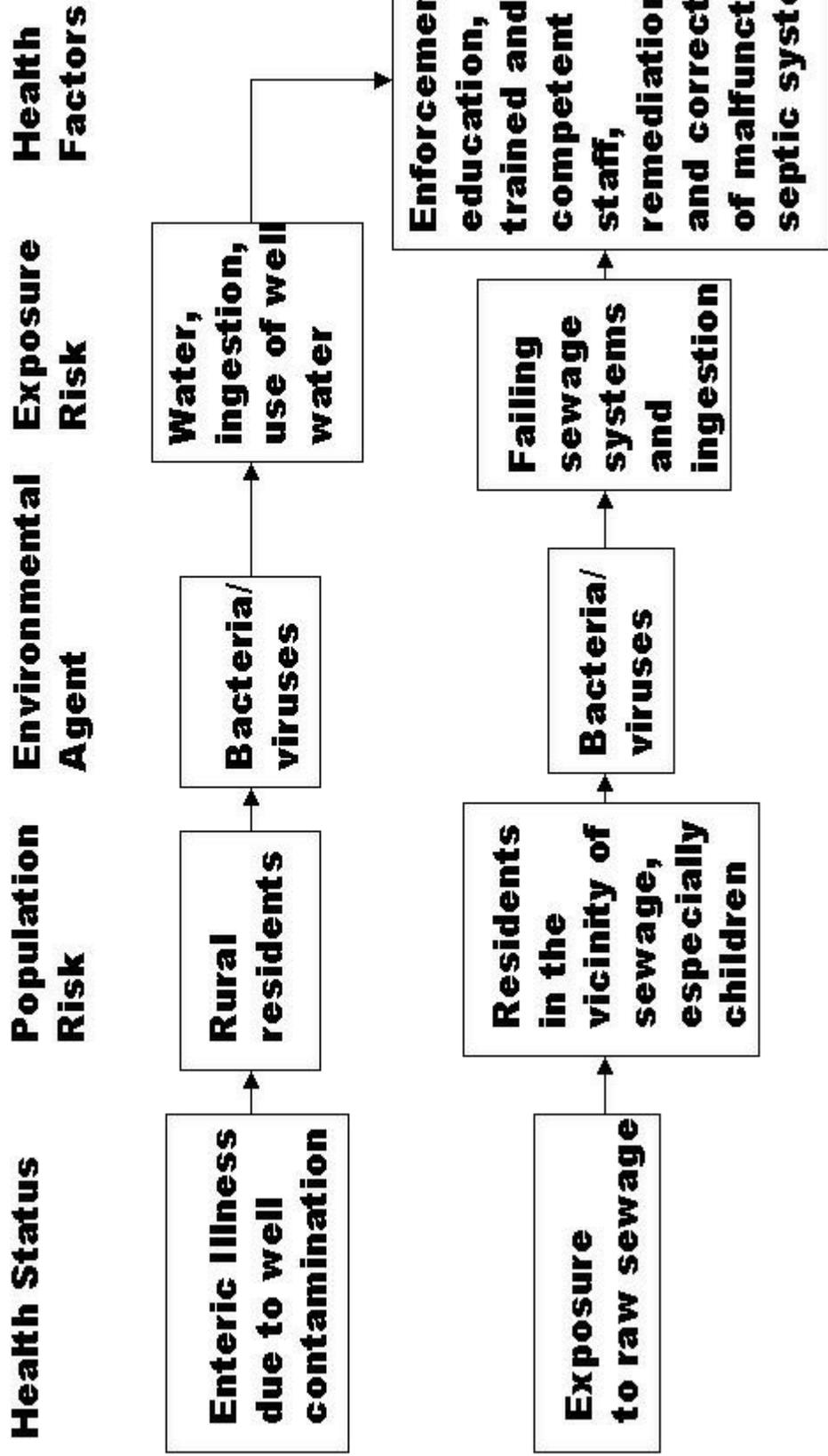


*Modeled on Minnesota program.

Waste Tires



Septic Systems



Manure Management

Health Status	Population Risks	Environmental Agent	Exposure Risk	Health Problems
Diarrhea/ Intestinal diseases	Swimmers/ Canoes	Bacteria/ viruses in river water Bacteria/ viruses in well water	Ingested water from recreational activity	Livestock manure management Well testing
Blueberry symptoms	Rural populations with private wells	Nitrogen fertilizer and feedlot waste runoff Septic tank effluent into well aquifers	Private well drinking water	Pollution prevention Controlling feedlot runoff Drilling new wells
Loss of Recreational Fishing/Boating	Recreational Fisherman and Boaters	Organic matter and NH		Replace septic tanks

**AIR QUALITY
PRIORITIZED**

- Sulfur Dioxide
- Carbon Monoxide
- Ammonia
- Sick Building Syndrome
- Ozone
- Particulate Matter/Odor

LANDUSE PRIORITIZED

- Sulfur Dioxide
- Hazardous Materials Exposures
- Contaminated Water Exposures
- Human Health Related to Conservation

DEMOGRAPHICS

McHenry County is located in Northeast Illinois, near the Wisconsin border. It is a geographically small county (604 square miles) and is home to approximately 250,000 residents. The County is comprised of both urban and rural centers. The city of Chicago is located in abutting Cook County, with whom McHenry County shares many demographic traits. In McHenry County, the median household income is just over \$59,000. Only about 3.5% of the population falls under the poverty line. It is a predominantly Caucasian county (94%). An average of 2.9 people live in each household.

MCHENRY COUNTY HEALTH DEPARTMENT

The McHenry County Health Department (MCHD), located in Woodstock, Illinois, submitted an application to serve as a pilot-test community for the *PACE EH* methodology. At the time the application was approved, MCHD housed an operating staff of 95 full-time employees and had an operating budget of just under \$3 million. MCHD sponsored an Environmental Health division, which was dedicated to environmental health programs (e.g., food safety, drinking- and surface-water testing, lead testing, air quality, onsite sewage, and solid waste). The MCHD Environmental Health division had 21 employees and an operating budget of \$750,000.

MCHD interest in serving as a *PACE EH* pilot site was a result of nearly 10 years of experience in community health assessment, including familiarity with the *Assessment Protocol for Excellence in Public Health (APEXPH)*, an assessment methodology designed to enhance capacities and improve leadership at local health agencies, and development of a local assessment of need and a community health plan that addressed several environmental health issues. Further, MCHD had a long history of collecting and maintaining extensive environmental health data concerning local drinking and surface water, foodborne illness, radon, septic systems, environmental lead, and disease vectors. In addition, MCHD staff had collaborated or assisted with several large-scale, environmental-health-related projects, ranging from the mapping of local waterways to food-safety education and radon awareness outreach efforts.

BEGINNING THE *PACE EH* PROCESS

In the final quarter of 1997, MCHD began their *PACE EH* process. Results from an internal assessment conducted in 1994 indicated that MCHD was adequately prepared to facilitate a local *PACE EH* process. Staff members from within the Environmental Health Division spearheaded the project. The Director of Environmental Health was tapped to coordinate the effort, and three additional staff members were recruited to serve on the community-based health assessment (CEHA) team. Together they began to identify and characterize the community to be assessed and devised a strategy for recruiting CEHA team members from the community.

THE MCHENRY CEHA TEAM

In addition to the four facilitators from MCHD, 12–15 community members were asked to join the CEHA team because of the value they could add to such a project. Each prospective team member was sent a letter of request by the facilitators detailing the vision and goal of the project and establishing the value of each member's involvement in the project. Further, each let-

**FOR MORE
INFORMATION:**

**MCHENRY COUNTY HEALTH DEPARTMENT
(815) 334-4510**

ter of invitation included a request that, in the event a prospective member could not serve, the invitation be passed on to someone within the organization willing and able to serve in their place. The effort resulted in a 19-member CEHA team representing many diverse community institutions, including regional EPA offices, Natural Resource Conservation Services, local Planning and Development Department, County Defenders, commercial well drilling, emergency medicine, local government, Illinois Migrant Council, and law enforcement.

GENERATING AN ENVIRONMENTAL HEALTH ISSUE LIST

The newly formed CEHA team was asked to collaborate to brainstorm a list of environmental concerns in McHenry County. Each member was given a package of statistical and demographic information pertinent to McHenry County. No parameters were set on the generation of this issue list. The intention of this exercise was to establish a sense of the breadth and depth of the environmental issues facing McHenry County, introduce CEHA team members to one another, and communicate each member's professional background.

The next three team meetings were spent discussing and refining this brainstormed list. The resulting list contained 11 categories (with five subcategories in the case of "Watershed") and 90 distinct environmental concerns. The team also came to recognize their list was still open to further category/issue reduction and that many of the concerns were problematically vague and therefore required further clarification.

The amount of time and effort spent developing this initial list of environmental concerns was far greater than the coordinators had expected. The process was valuable in that it served to pull the team together and exposed them to a wide variety of issues, preparing them for the broad view of environmental health important to a successful *PACE EH* process. However, it was time consuming, and the resulting list of concerns was long and complex. The team had difficulty envisioning how useful the list would be to future project endeavors.

The next step in identifying community environmental health concerns was the development and distribution of an informal opinion survey. The CEHA team members designed the survey with the assistance of a prototype environmental health survey provided by another *PACE EH* pilot-site coordinator. The team distributed the survey themselves on a situational basis; the team members took advantage of previously existing meetings and events at local schools, libraries, and municipalities to encourage community members to complete a survey questionnaire.

The situational distribution of the survey yielded approximately 300 responses. The results were entered into a spreadsheet program and the data were analyzed and graphed for interpretation by the team. The survey methodology was inexpensive and effective, but could have been subject to scientific bias introduced by non-random sampling.

Analysis of the surveys in conjunction with information developed during initial team meetings resulted in a list of 12 environmental health "areas of concern" from which indicator development could begin. The 12 areas ranged from specific (e.g., indoor air quality) to more general "social" issues (e.g., tobacco use, teen pregnancy, and domestic violence). Each area was further developed, on the basis of survey results and assessment team interaction, such that "examples" of specific concerns within that topic area were bulleted under the topic heading. For example, the topic of "indoor air quality" was accompanied by the following concerns.

INDOOR AIR QUALITY

- Tobacco
- Ventilation
- Carbon Monoxide
- Allergens
- Asbestos
- Radon

Once the list of topic area and examples was developed, the McHenry County process relied on the expertise of the assessment team to develop specific indicators. Individual or paired members of the assessment team were assigned a specific topic from the list based on their particular professional/personal background. For instance, a professional well driller was assigned to develop ground-water indicators, and a food-safety expert was given the task of developing applicable food-safety indicators. The McHenry County assessment team sought to take advantage of the strengths of their personnel, ensuring that the team members most qualified to approach a given topic took the lead in developing indicators addressing that topic.

Assessment-team members were asked to think about broad and specific concerns within their topic area in a context suggested by the *PACE EH* draft document. In the *PACE EH* methodology, environmental health data are described with reference to the following five characteristics.

- Existing or Potential Health Status
- Population at Risk
- Environmental Agent
- Exposure/Health Risk
- Public Health Protection Factors

The McHenry County assessment team was given definitions for all five characteristics. Team members then completed worksheets delineating their specific concerns within the context provided by these five characteristics.

For example, in McHenry County, one area of concern is “hazardous substances.” A specific example of concern is “limited hazardous-waste drop-off sites.” A completed worksheet contained the following information:

- ❑ **Existing or Potential Health Status:** Improper disposal and exposure to hazardous household waste.
- ❑ **Population at Risk:** All persons in McHenry County.
- ❑ **Environmental Agent:** Petroleum, household cleaning agents, and paints.
- ❑ **Exposure/Health Risk:** Death or illness by exposure to household hazardous waste and contamination of ground and water.
- ❑ **Public Health Protection Factor:** A permanent drop-off location with convenient hours of operation.

DEVELOPING INDICATORS

The worksheets provided information in a format that lent itself easily to indicator development. For example, the “hazardous Substances” worksheets suggested that one possible measurement of a locale’s ability to protect itself from illness by exposure to hazardous household waste might be the number, locations, and hours of operation of permanent drop-off cen-

ters for household hazardous waste. Analysis of the worksheets also indicated that patterns of use of petroleum products, household cleaning agents, and paints might assist planners when deciding the locations of future drop-off centers.

The team reconvened after members had completed their assigned worksheets. They then worked together to refine the indicators developed and ensure that every member had an opportunity to consider and comment on other members' contributions.

SELECTING STANDARDS AND CREATING ISSUE PROFILES

Following the completion of the indicator development, the team began ranking the indicators to reduce the number brought forward into the selection of standards and the creation of issue profiles. Each team member was instructed to supply each indicator with a number representing its importance relative to the others. The top scoring indicators were reexamined and scored for relative importance again; a resulting 10 top-scoring indicators were brought forward into the next task.

The team began considering the 10 indicators and the data collection required to create issue profiles for each. Each team member was asked to provide a list of relevant databases to which they had, or could get, access. A subgroup of the team was tasked with reviewing the data sources and gathering existing relevant data, including any local or national standards related to the issue. This subgroup was also responsible for writing the issue profiles (called "scopes" by the team) and presenting them to the entire team. In preparation for devising action plans, the team decided as a whole if, and where, additional information was needed prior to ranking and prioritizing the issue profiles.

PACE EH TOOLS AND DOCUMENTS USED BY MCHENRY COUNTY

- A. McHenry County CEHA Membership List**
- B. Community Environmental Assessment (sample survey)**
- C. Environmental Indicators - Overdevelopment and Urban Sprawl (sample profile)**

MCHENRY COUNTY CEHA MEMBERSHIP LIST

A

MCHENRY COUNTY, IL

AGENCY/AFFILIATION

United States Environmental Protection
Agency/Illinois Environmental Protection
Agency

Natural Resources Conservation
Service/United States Department of
Agriculture

Illinois Migrant Council

McHenry County Planning & Development

High School & Middle School Surface &
Groundwater Project/School Teacher

Senior Citizen/Citizens Environmental Group

McHenry County Conservation District/Parks

Village of Johnsburg City Council/Well Driller

Northern Illinois Planning Commission -
Environmental Planner/Aquatic Biologist

Environmental Consultant/Engineer

Editor, Food Industry Newsletter

Emergency Medicine & Occupational
Medicine Physician/Citizen Environmental Group

Environmental Consultant/County Board
Member

Emergency Services Coordinator/Local
Emergency Planning Committee

McHenry County Sheriff Department

B This survey is part of an effort by the McHenry County Community Environmental Health Needs Assessment Project Committee to identify the environmental issues that are most important to the people of McHenry County. Your responses on this survey will play a major role in determining which environmental problems are given top priority in the next several years. The survey is anonymous - your name is not required. Thank you for assisting us in this effort. All surveys need to be postmarked or returned to the McHenry County Department of Health by June 30, 1998.

(1) Which of the following environmental issues do you believe should receive priority attention in McHenry County? Check five (5).

- | | |
|---|---|
| <input type="checkbox"/> Abandoned buildings | <input type="checkbox"/> Overdevelopment |
| <input type="checkbox"/> Biodiversity (loss of wild animal populations/habitat) | <input type="checkbox"/> Pesticides & Herbicides - agricultural/residential |
| <input type="checkbox"/> Contaminated land/soil | <input type="checkbox"/> Radon |
| <input type="checkbox"/> Disposing of garbage & waste | <input type="checkbox"/> Residential hazardous chemical use/disposal |
| <input type="checkbox"/> Drinking water quality/quantity | <input type="checkbox"/> Septic systems |
| <input type="checkbox"/> Food safety | <input type="checkbox"/> Sewage & sludge disposal |
| <input type="checkbox"/> Hazardous material transporting/handling | <input type="checkbox"/> Surface water quality (i.e. lakes, streams, beaches) |
| <input type="checkbox"/> Illegal/open dumps | <input type="checkbox"/> Tobacco use |
| <input type="checkbox"/> Improper disposal of hazardous waste | <input type="checkbox"/> Transportation (mass transit) |
| <input type="checkbox"/> Indoor air quality (chemicals, molds/allergens, smoke) | <input type="checkbox"/> Transportation (i.e. bike paths, pedestrian paths) |
| <input type="checkbox"/> Industrial chemicals and toxins | <input type="checkbox"/> Violence |
| <input type="checkbox"/> Injuries (i.e. falls, burns, drownings) | <input type="checkbox"/> Waste reduction & recycling |
| <input type="checkbox"/> Lead exposure (lead paint) | <input type="checkbox"/> Other (please list) _____ |
| <input type="checkbox"/> Motor vehicle accidents | _____ |
| <input type="checkbox"/> Outdoor air quality (auto emissions, open burning) | _____ |

(2) Using the above list, from your standpoint, which environmental issue needs the most attention? _____

(3) Are there any environmental conditions in your immediate neighborhood that you feel may be contributing to any family illness?

YES / NO (Please circle one) If yes, what? _____

(4) Is there anything at your work place that you feel may be harming your or someone else's health?

YES / NO (Please circle one) If yes, what? _____

(5) Do you feel your home is environmentally safe to live in?

YES / NO (Please circle one) If no, why? _____

Please help us in our evaluation by checking the item that applies to you:

- (1) Age? Less than 25___ Age 25 to 44___ Age 45-64___ Older than 64___
- (2) Gender? Male_____ Female_____
- (3) Highest Education Level? Less than High School_____ High School Diploma_____ College or Technical_____
- Graduate School_____ Professional School_____
- (4) Residence? City_____ Zip code_____
- (5) Location? Incorporated yes_____ no_____

Optional information

Name_____ Address_____

Comments_____

Please postmark or return survey to the McHenry County Department of Health by June 30, 1998.

ENVIRONMENTAL INDICATORS: OVERDEVELOPMENT AND URBAN SPRAWL

C

Scope: This category addresses overdevelopment and urban sprawl in McHenry County. It includes population growth and land use.

Background: When addressing growth issues in McHenry County there are two alternatives. The first focuses on maintaining the small town/countryside character found in most of the County. The other alternative, urban sprawl is considered the opposite of the first philosophy. It is unmanageable growth which symptoms include:

- Strained governmental service delivery
- Environmental loss
- Inadequate growth management regulation
- Growth of new fees and taxes

The State of Illinois percent population change from 1990 - 1997 is 4.1. In comparison, McHenry County has experienced the largest percent population change at 29.3. Surrounding counties have also seen growth in which the closest rate of change is Kane County at 19.9 followed by Lake County at 15.2 and DuPage County at 11.3.

National Data:

Statistics for the American Planning Association

- Between 1970 and 1990, the population of the US increased by 22.5% yet the number of vehicle miles traveled increased 98.4%.
- The average American family spends one sixth of its total budget on transportation, more than food, clothing and healthcare.
- Sprawl worsens non-point source pollution by generating 43% more runoff with 3 times greater sediment loads than traditional development.
- Every hour of every day, 50 acres of prime farmland are lost to development.
- Between 1970 and 1990 the population of the Chicago metro area grew by 4%, developed land increased by 46%.

Local Data:

McHenry County 1990 Land Use Summary Northeastern Illinois Planning Commission (NIPC)
(In Square Miles)

Total Area: 611.02

Type	Sq. miles
Residential	82.76
Commercial & Services	6.33
Institutional	3.57
Industrial	16.14
Trans., Comm., Utilities	1.97
Agriculture	380.19
Open Space	13.78
Vacant	96.69
Water	9.52

Under Pressure: Land Consumption in the Chicago Region 1998 - 2028 McHenry County

Total Acres	390,698
Built Up Acres	53,534
% Built Up	13.70
Acres Forecast for Development in Next 10 years	79,856
Acres Forecast for Development in Next 30 years	60,525
Acres Unlikely to be Developed any time soon	178,514
Permanent Open Space Area	13,766

U.S. Census Bureau Population Estimates for NIPC McHenry County

Year	Population
July 1997	236,952
July 1996	230,997
July 1995	224,569
July 1994	216,147
July 1993	207,810
July 1992	199,496
July 1991	192,488
July 1990	185,239
April 1990 Census	183,241
1980	147,897

Northeastern Illinois Planning Commission Forecasts

	1990	2020 (ORD)*
Northeast Illinois Total	7,261,176	9,045,000
McHenry County	183,241	361,598

*"ORD" alternative assumes all growth in air service demand is accommodated at improved existing airports

Final Forecast Results (Northeastern Illinois Planning Commission)

Population by Municipality	1990 Census	2020 Population (ORD)
Algonquin	11,663	38,115
Crystal Lake	24,512	62,032
Huntley	2,453	39,258
McHenry	16,177	28,260
Woodstock	14,353	22,464

Population by Township NIPC McHenry County

Township	1990 Census	2020 Population (ORD)
Alden	1,457	1,995
Algonquin	57,746	107,163
Burton	2,144	4,839
Chemung	6,660	25,740
Coral	2,549	3,748
Dorr	14,231	20,347
Dunham	2,001	2,502
Grafton	9,946	52,124
Greenwood	8,317	11,726
Hartland	1,911	2,625
Hebron	1,817	2,332
McHenry	37,034	48,050
Marengo	5,723	8,330
Nunda	24,759	58,107
Richmond	3,286	6,070
Riley	1,431	2,549
Senecca	2,229	3,361

Community Surveys

*McHenry County Defenders: March 1997 Survey
Random Telephone Poll of 400 Residents*

What is the most important issue facing your community?

- 1. 22.4% Growth/Crowding Development
- 2. 15.5% Education
- 3. 9.9% Traffic

Would you say that your area is developing too quickly, too slowly, or at the right pace?

- Too Quickly 68.3%
- Too Slow 4.5%
- Right Pace 25.9%

Many opponents of additional development say that it will eventually change the character and appearance of McHenry County for the worse. Do you agree or disagree?

- Agree - 76.6%
- Disagree - 18.0%
- Don't Know - 5.5%

*CEHA Survey: July 1998
311 Surveys Received*

Identified overdevelopment as the second major concern in McHenry County with the total of 157 out of 1390 total responses.

DEMOGRAPHICS

During the late 1990s, the Northern Kentucky Independent District Health Department (NKIHD) served a population of approximately 348,000. The counties included in the Northern Kentucky District are Boone (population: 85,991), Campbell (population: 88,616), Grant (population: 22,384), and Kenton (population: 151,464). NKIHD is represented primarily by six distinct health centers in the cities of Florence, Newport, Williamstown, Covington and Edgewood. The health department provides support to communities ranging from large urban centers to suburbs and sparsely populated rural areas. Northern Kentucky District is located across the Ohio River from Cincinnati, Ohio and is a part of the Greater Cincinnati Metropolitan Area. The region is not particularly diverse; approximately 96% of the population across all four counties is Caucasian. The families living in the Northern Kentucky health region are economically more diverse, with median household incomes ranging from \$33,000 (Grant County) to \$49,000 (Boone County); the percentage of the population with household incomes below the poverty line ranges from 6% (Boone County) to 13% (Grant County). Residents of the region are considerably less ethnically diverse and have higher household incomes than average for the State of Kentucky. The four counties are also among the most densely populated. With the exception of Grant County (which has a population of 86 persons per square mile), the counties within the District have populations that far exceed the state average of 102 persons per square mile.

NORTHERN KENTUCKY INDEPENDENT DISTRICT HEALTH DEPARTMENT

Upon committing to sponsor a *PACE EH* process, NKIHD employed 175 staff members and operated with a budget of approximately \$7 million. Their environmental health responsibilities focused on food-safety programs, private water testing, on-site sewage monitoring, public swimming establishments, school facilities, lead-poisoning abatement, and animal vectors. The Department did not facilitate programs for public water and sewage, air quality, and solid-waste disposal. NKIHD answered to a Board of Health consisting of a district board and four county boards staffed by regional mayors, county judges, and other local community leaders.

NKIHD applied to pilot test *PACE EH* having already developed expertise in both public health assessment activities and community outreach. As early as 1993, the Department had established a Community Health Committee tasked with conducting community assessments and advising the Board of Health on regional priority health issues. The Community Health Committee drew its membership from local health officials, community leaders, local businesses, and many environmental interest and regional planning groups. The expertise and interests represented by the Community Health Committee provided linkages between the NKIHD and diverse planning, environmental, and health institutions throughout the region.

BEGINNING THE *PACE EH* PROCESS

From the outset, NKIHD opted to conduct their *PACE EH* process as a distinct but related component of their ongoing *APEXPH* efforts. *The Assessment Protocol for Excellence in Public*

**FOR MORE
INFORMATION:**

**NORTHERN KENTUCKY INDEPENDENT DISTRICT
HEALTH DEPARTMENT
(859) 341-4264**

Health (APEXPH) is a methodology designed to enhance capacities and improve leadership at local health agencies. The results of their APEXPH work indicated the need for a unique focus on environmental health issues. Through APEXPH, water pollution, sewage, solid waste, and air quality were identified as being public health priority areas – areas that traditionally had not been overseen by the Department of Environmental Services. Building upon this foundation, NKIHD implemented *PACE EH* with facilitation by internal staff and with funds earmarked for continuing APEXPH work, adding additional staff as needed. The Public Health Director and the Director of Environmental Services worked jointly to develop the necessary internal and external support. In particular, they sought and garnered the inclusion of representatives from the Northern Kentucky Area Development District, regional offices of the Kentucky Environmental Protection Agency, and the Kentucky Department of Natural Resources.

THE NORTHERN KENTUCKY CEHA TEAM

The *PACE EH* subcommittee of the Community Health Committee served as Northern Kentucky's community-based environmental health assessment (CEHA) team and eventually came to consist of 26 individuals representing regional public health agencies, local businesses, environmental interest groups, and other community members. Although four NKIHD staff members served the Community Health Committee and helped to facilitate the *PACE EH* process, the role of the NKIHD staff members was only to facilitate the process. The *PACE EH* subcommittee was encouraged to "own" the process and tap the NKIHD for assistance only as desired. The NKIHD usually organized and hosted the meetings, but the subcommittee developed agenda items and project directions.

GENERATING AN ENVIRONMENTAL HEALTH ISSUE LIST

The *PACE EH* subcommittee benefited from having a foundation laid for them by the APEXPH work undertaken by the Community Health Committee in 1996; a completed statewide comparative risk study also recently had been completed. The APEXPH work indicated that the community was concerned with water pollution, sewage, solid-waste, and air-quality issues. The *PACE EH* subcommittee examined the comparative risk study and other existing Kentucky environmental health data sources and identified 128 specific environmental health issues. The subcommittee members spent three months discussing and studying the issues. From these discussions, the *PACE EH* subcommittee developed a community survey tool. The tool provided respondents with a list of 20 environmental health issues, giving them the option to write in additional concerns. Respondents were asked to indicate five issues that they felt needed priority attention. The tool also included yes/no questions related to individual perceptions of local environmental health. Subcommittee members informally distributed survey forms to co-workers, clients, and local associations (e.g., churches, parent-teacher associations, and social clubs). The *PACE EH* subcommittee collected 317 completed surveys and analyzed the results.

Survey results and existing data were reexamined and, when possible, the *PACE EH* subcommittee grouped similar issues and excised redundancies. This process resulted in 66 environmental health issues. At this point, the NKIHD staff members serving the subcommittee established 22 broad environmental health issues after examining and regrouping the 66 previously identified issues. The aggregated list of 22 issues was presented to the full subcommittee for discussion and further development. Consensus discussions resulted in a list of 24 environmental health issues to be brought forward in the process.

DEVELOPING INDICATORS, SELECTING STANDARDS, AND CREATING ISSUE PROFILES

The Northern Kentucky *PACE EH* subcommittee did not move directly from issue identification into indicator development, the selection of standards, and the creating of issue profiles as laid out in the draft *PACE EH* methodology. In collaboration with relevant partners from across Kentucky, NKIHD staff facilitators were simultaneously involved in developing and drafting a list of statewide environmental health indicators. They encouraged the *PACE EH* subcommittee to wait until indicators emerged from the statewide effort before establishing potentially redundant local indicators. Standards by which to evaluate specific indicators were likewise developed later in the process. The subcommittee also wanted to ensure their work could be reunited with that of the *APEXPH* subcommittee. Thus, profiles for issues emerging from the *PACE EH* process were to be developed in the same format as were issues uncovered in the Northern Kentucky *APEXPH* process.

RANKING AND PRIORITIZING THE ISSUES

To bring the *PACE EH* process more in line with the *APEXPH* process, the subcommittee decided to rank and prioritize the 24 environmental health issues included in the community survey tool. The team rated each issue on a simple inclusive scale of priority risk, each being denoted as high, medium, or low risk. Each subcommittee member assigned every issue a risk priority rating. Those deemed by consensus of the subcommittee as a low risk priority were dropped from the list. Further effort was made to combine the remaining medium and high-risk priority issues. The subcommittee eventually agreed upon seven issues to bring forward for more detailed ranking and prioritizing.

Subcommittee members used worksheets adapted from the *APEXPH* workbook to evaluate each of the seven issues for “severity” and “action.” These worksheets were then scored, and the scores were combined to create a total score for each issue. The issues were ranked by combined scores, and the top two issues were selected to be included in the Community Health Plan 1999.

CREATING ACTION PLANS

After the two issues were identified, the *PACE EH* subcommittee developed several outcome objectives and possible interventions and preventive activities. From the outset, the *PACE EH* subcommittee intended to develop action plans for only two environmental health issues. The format of these action plans would be made compatible with the format developed through the *APEXPH* process. In 1999, the Northern Kentucky Community Health Committee released their Community Health Plan. The plan, detailing action steps developed through the simultaneous *PACE EH* and *APEXPH* processes, offers a detailed account of regional health status, community health objectives, and projected timetables addressing five community health issues, two of which (i.e., outdoor air quality and surface-water quality) specifically emerged from their *PACE EH* process.

CURRENT STATUS OF THE *PACE EH* PROJECT

Since the publication of the Community Health Plan, an Environmental Implementation Team has been established as a subcommittee of the Community Health Committee. The task of this subcommittee is to develop strategies for implementing the environmental objectives of the plan. The subcommittee has been meeting for two years and has focused on several objectives. The most significant accomplishment has been the formation of a Household Hazardous

Waste coalition involving four counties. The coalition has received more than \$12,000 to plan for a household-hazardous-waste collection day. An Environmental Implementation Team (EIT) has been formed and meets as part of the ongoing assessment activities in the community. Several members of the *PACE EH* Subcommittee of the Community Health Committee have become full members of the EIT, thus ensuring a strong environmental component for the committee as it begins future community health assessment activities.

ADVICE FOR FUTURE USERS OF *PACE EH*

NKIHD's facilitators of the *PACE EH* process advise future *PACE EH* users to allow more time to complete the process than may be anticipated. Staff time needed to continue the process (e.g., developing agendas, minutes, and worksheets) tends to increase as the process moves forward. In addition, communities implementing the *PACE EH* process should bring as many people and agencies into the process as possible. The health department, as the lead organization, should establish close ties between "traditional" health department partners and environmental interest organizations – ties that will result in increasingly collaborative projects initiated by both public health and environmental organizations.

For NKIHD, the *PACE EH* process has greatly expanded their leadership role in the community within public health, environmental health, and political arenas. *PACE EH* and *APEXPH* are useful for distinct aspects of community planning. They are not mutually exclusive; rather, each supports the other. Together, *APEXPH* and *PACE EH* not only identify and define local public health and environmental health priority objectives, but they also build public health system infrastructure and impel coalition formation across disparate sectors of the community.

***PACE EH* TOOLS AND MATERIALS USED BY NORTHERN KENTUCKY**

- A. Northern Kentucky Community Health Committee *PACE EH* Sub-committee Members
- B. Sub-committee Description/Application
- C. Community Environmental Assessment (survey)
- D. Risk Level Prioritizing Worksheet
- E. Priority Setting: Problem Seriousness - Air Quality (example)
- F. Plan Building Chart - Outdoor Air Quality (Sample action plan)
- G. The Kentucky Post - "Cleaning Up the Environment" (sample media release)

NORTHERN KENTUCKY COMMUNITY HEALTH COMMITTEE***PACE EH SUBCOMMITTEE MEMBERS***

Children's Hospital Medical Center

Bray Trucking, Incorporated

Buechel, Conley, and Schutzman (law firm)

OKI Regional Council of Governments

Boone, Kenton, and Campbell Conservation Districts

Kentucky Environmental Protection Agency

Campbell County Fiscal Court

Diocese of Covington

TriState Consulting/Northern Kentucky Sierra Club

St. Luke Hospital-West (Nursing Administration)

Northern Kentucky Area Development District

Northern Kentucky District Health Department

Thomas More College

Fragge Allergy and Asthma Clinics

Social Security Administration

St. Luke Hospital-West (Education)

Northern Kentucky Water Service District

Tri-State Gastroenterologists Associates

Northern Kentucky University

NORTHERN KENTUCKY COMMUNITY HEALTH COMMITTEE SUBCOMMITTEE DESCRIPTION OF RESPONSIBILITIES

B

NORTHERN KENTUCKY, KY

The Northern Kentucky Community Health Committee was convened by the Northern Kentucky District Board of Health for the task of assessing the health of the Kentucky Community (Boone, Campbell, Grant and Kenton Counties) and developing a Community Health Plan. The *PACE EH* Environmental Assessment subcommittee was formed to study the environmental health concerns of Northern Kentucky and to help develop the Community Health Plan.

Length of Commitment:

- A maximum of one to two years will be required to develop and implement the health plan.

Estimated Time Required:

- Eight to ten meetings per year of one to two years.
- One to two hours a month for preparation and follow-up.
- Level of participation may vary depending on commitment and ability to provide time.

Desired Attributes:

- Commitment to improving the health of the community.
- Knowledge related to environmental issues, community resources or skills beneficial to the planning process.
- Willingness to maintain a district-wide perspective.
- Ability to represent an important perspective, organization, or sector of the district.

Specific tasks to be accomplished:

- Define environmental health issues in terms of scope and desired measurable outcome.
- Identify specific contributing risk factors to be addressed by the plan.
- Define specific measurable objectives.
- Recruit commitment of participation by organizations in a Community Health Plan.
- Develop a Community Health Plan.

Benefits of participation:

- An opportunity to improve the level of health in the community.
- Personal and professional growth.
- An opportunity to represent your organization, profession or community.
- An opportunity to work with other leaders committed to health in the Northern Kentucky community.

B NORTHERN KENTUCKY COMMUNITY HEALTH COMMITTEE SUBCOMMITTEE APPLICATION

Subcommittee: *PACE EH* Environmental Assessment Pilot Project

Name: _____

Mailing Address: _____ (Work _____ Home _____)

City: _____ State: _____ ZIP: _____

Phone (Daytime): _____ (Work _____ Home _____)

FAX# _____ E-mail _____

Employed by: _____

Title: _____

Reason you wish to be on the subcommittee:

Special perspective, skills, training, or experience which may benefit the subcommittee:

Can you represent your employer on the subcommittee in the development of a Community Health Plan?

_____ Yes _____ No, but I wish to help develop a plan.

Return to:
APEXPH Coordinator
No Ky Ind District Health Dept

COMMUNITY ENVIRONMENTAL ASSESSMENT



This survey is part of an effort by the Northern Kentucky Community Health Committee to identify the environmental issues that are most important to the people of Northern Kentucky. Your responses on this survey will play a major role in determining which environmental problems are given top priority in the next several years. The survey is anonymous—your name is not required. Thank you for assisting us in this effort.

(1) Which of the following environmental issues do you believe should receive priority attention in McHenry County? Check five(5).

- Abandoned buildings
- Biodiversity (loss of wild animal populations/habitat)
- Contaminated land/soil
- Ground water quality
- Hazardous material transport
- Illegal / open dumps
- Improper disposal of hazardous waste
- Improper air quality (chemicals, radon, smoke)
- Industrial chemicals and toxins
- Lead exposure (lead paint)
- Noise pollution
- Outdoor air quality
- Residential hazardous chemicals
- Safe drinking water
- Septic Systems
- Surface water quality - creeks and streams
- Surface water quality - ponds and lakes
- Urban development
- Waste management
- Other (please list) _____

(2) Using the above list, please list the one environmental problem that you think needs the most attention

(3) Are there any environmental conditions in your immediate neighborhood that you feel may be contributing to any family illness?

YES / NO (Please circle one) If yes, what? _____

(4) Is there anything at your work place that you feel may be harming your health?

YES / NO (Please circle one) If yes, what? _____

(5) Are there any environmental conditions in Northern Kentucky which you feel need immediate attention?

YES / NO (Please circle one) If yes, what? _____

(6) Do you feel your home is environmentally unsafe?

YES / NO (Please circle one) If yes, why? _____

(7) Do you avoid outdoor recreation areas because you feel they are environmentally unsafe?

YES / NO (Please circle one) If yes, what? _____

Optional Information – Check the item that most closely fits you

- (1) Age? Less than 25 ___ Age 25 to 44 ___ Age 45 to 64 ___ Older than 64 ___
- (2) Gender? Male ___ Female ___
- (3) Education Level? Less than High School ___ High School Diploma ___ College or Technical ___ Graduate School ___
- (4) County of Residence? Boone ___ Campbell ___ Grant ___ Kenton ___ Other _____
- (5) Residence? City ___ Rural ___ Suburban ___

RISK LEVEL PRIORITIZING WORKSHEET

Environmental Health Issues	High Priority	Medium Priority	Low Priority
Abandoned buildings (i.e., commercial, industrial)			
Biodiversity (loss of native plants and animals, habitat, and exotic species)			
Contaminated land/soil			
Ground water quality (well water, etc.)			
Hazardous material transport			
Illegal/open dumps, litter			
Improper disposal of toxic or hazardous waste			
Indoor air quality (chemicals, radon, smoke)			
Industrial chemicals and toxins			
Residential lead exposure (lead paint, soil contamination)			
Noise pollution			
Outdoor air quality			
Population density			
Residential hazardous chemicals (i.e., paints, pesticides)			
Safe drinking water (public or private water)			
Dysfunctional septic systems			
Inadequate sewer systems			
Combined sewer overflows			
Surface water quality – creeks and streams			
Surface water quality – ponds and lakes			
Urban/suburban development			
Waste management			
Superfund sites and brownfields			
Other:			
Other:			

PRIORITY SETTING: PROBLEM SERIOUSNESS

AIR QUALITY

Health Problem Defined: *A situation or condition of people which is considered undesirable, is likely to exist in the future, and is measured as death, disease, and disability.*

Question 1: Is this a health problem or contributing to a health problem in No. KY?

Question 2: Is the problem severe, pervasive, or in need of immediate action?

Instructions: If the answer to both questions is "Yes," then check "Yes." Otherwise check "No."
 A "Yes" vote essentially means that we will consider the problem for future study.

Health Problem	Yes	No
Area Sources (outdoor grill, gas stations, construction equipment, off-road vehicles)		
Atmospheric deposition		
Particulates		
Incineration		
Open burning		
Stationary-Waste incinerators		
Non-regulated sources (Volatile Organic Compounds)		
Mobile-Vehicle		
Noise Pollution		
Energy Consumption		
Population Density		
Stationary - Home		
Stationary - Industrial		
Air toxics		
Industrial air pollution		
Stationary Sources (low-level ozone, hazardous pollutants)		
Urban air pollution		
Unregulated sources (lawn mowers)		
Odor from small business		
Global warming		
Population		
Radiation (EMF power lines)		

Northern Kentucky Independent District Health Department

AIR QUALITY

SHOULD ACTION BE TAKEN?

DEMAND AND SUCCESS POTENTIAL:	HIGH 3	MEDIUM 2	LOW 1
Political pressure			
Public demand/acceptability			
Preventability (personal and community-based)			
Affordability/cost-effectiveness of intervention			
Economic impact if <i>not</i> addressed			
Affected individuals' quality of life impaired (cancer, lead poisoning, asthma, etc.)			
Community's collective quality of life impaired (aesthetics, peace of mind, recreation, intrinsic worth)			
Legal authority constraints			
Confidence in data			
Other community considerations (specify):			
Totals:			

Plan Building Chart

(Outdoor Air Quality)

HEALTH PROBLEM
Increased prevalence of respiratory distress during the months of April through September.

OUTCOME OBJECTIVE
By the year 2009, reduce by 20% the increase in admissions and emergency room visits for chronic obstructive pulmonary disease (COPD) exacerbations, asthmatic attacks, and other respiratory diseases from April through September, over the October-March baseline.

IMPACT OBJECTIVE #1
Reduce the average P.S.I. by 25% between April 1st and September 30th each year by reducing Nox, volatile organics, and particulates in the air.

IMPACT OBJECTIVE #2
80% of those people with chronic obstructive pulmonary disease will receive coping strategies from their primary care physician, healthcare provider, or pharmacy.

IMPACT OBJECTIVE #3
Increase by 5% the population in Northern Kentucky who have received information related to air quality issues.

Process Objectives

- Reduce gasoline usage per capita by 10%, as measured by gasoline taxes and other fossil fuels.
- Prohibit or reduce open burning, especially land clearing practices.
- Reduce power mower/tool use.
- Promote car pooling through company involvement – publishing rates incentives.
- Encourage alternatives to lawns in landscaping (i.e., change city zoning and planned community association regulations that prohibit alternatives).
- Urban planning – bike trails, walking paths, housing close to stores, etc.
- Automated product delivery system, reducing the need for driving to stores, using public transportation.
- Urban/suburban growth limitations (i.e., regional planning to reduce driving miles).
- Promote telecommunications, working at home.
- Alternate fuels for fleet use.
- Entice businesses to locate closer to residential areas.
- Raise the price of gas or gas taxes.
- Develop a system for data collection that correlates PSI w/ hospital admissions/ER visits due to respiratory distress.

Process Objectives

- Educate the public, especially COPD patients, concerning what to do when air quality is poor – mold, pollen, pollution levels high.
- Educate physicians regarding what to tell COPD patients related to air quality recommended actions.

Process Objectives

- Educate the public that “they are the problem.”
- Improve environmental education through an Environmental Education Center (KY Environmental Education Council).
- Develop and distribute newsletters that inform and encourage citizens to help reduce the PSI readings.
- Utilize the media to educate the public – public service announcements, newspaper articles, etc.
- Promote environmental health education in schools and colleges, i.e., one class per school year that emphasizes ozone depletion, global warming, etc.

Barriers:

- Political will to make change.
- Public and business acceptance.
- Funding.
- Lack of sufficient data to develop objectives.

Barriers:

- Possible resistance from healthcare providers.
- Public may ignore health warnings.
- Funding.

Barriers:

- Funding.
- Possible resistance from educational centers to incorporate environmental education in the curriculum.

Community Resources:

- City newspapers
- Area newsletters
- News media
- ROC – Regional Ozone Coalition (OKI)
- Graduate students/universities/colleges
- Hospitals
- EPA local publications (US & KY)
- Chamber of Commerce
- No. KY Area Development District
- Area businesses
- Healthcare providers
- No. KY Health Department
- Area planning and zoning
- Forward Quest

Community Resources:

- Healthcare providers
- Hospitals
- Media
- No. KY Health Department
- Pharmacists

Community Resources:

- No. KY Health Department
- Hospitals
- Healthcare providers
- EPA
- OKI
- Schools/colleges
- Local media



The Kentucky Post

Kentucky

Cleaning up the environment

Pilot project aimed at better local health

By Julie Ralston
Post staff reporter

Community leaders, environmental and state agencies, industries and other groups will be working together over the next year to assess Northern Kentucky's environment and find ways to clean it up.

It's part of a pilot project through the National Association of County and City Health Officials (NACCHO).

The Northern Kentucky Independent District Health Department was one of 10 organizations around the country chosen to conduct the project.

The Barren River District Health Department in south-central Kentucky also was chosen for the project.

Other community agencies are in Iowa, Texas, Virginia, and Pennsylvania.

Each agency will identify and prioritize environmental problems in their communities and find ways to address them. That information will be sent to NACCHO.

The goal is to create a plan for local health departments to follow when assessing environmental issues in their own communities, said Cheryl Connelly, program coordinator at the national organization.

Northern Kentucky conducts a similar self-study on community health issues through a project called Assessment Protocol for Excellence in Public Health, which also was developed by NACCHO.

The result was the first Community Health Plan, published in 1996.

The environmental assessment is meant to complement the health study, said Alan Kalos, planning coordinator for the Northern Kentucky Health Department.

"The environment has a big effect on health . . . The

Industries aid health study

- The Northern Kentucky Independent District Health Department is signing up area industries, agencies, and community leaders for the pilot environmental project.
- The department will analyze environmental health data – including a recently completed, three-year state environmental study – and define health risks.
- Then the department will set priorities and develop a local environmental health plan.

ultimate goal is to be able to have a clear set of priorities as far as environmental issues for Northern Kentucky as established in an assessment process," he said.

The health department also will work with the Centers for Disease Control in Atlanta, the U.S. Environmental Protection Agency, the Kentucky Department of Public Health, and the Kentucky Cabinet for Natural Resources and Environmental Protection throughout the length of the study.

Some environmental issues that will be investigated include air and water quality, said Jeffrey Harmon, an attorney with the law firm Cors &

Bassett, who has worked on environmental matters with the Northern Kentucky Health Department for more than eight years.

"This really is the first opportunity we've ever had to focus on environmental issues in Northern Kentucky," he said.

Publication date: 10-06-97

DEMOGRAPHICS

With more than 1 million citizens, San Antonio is considered the capital city of south Texas. Because of its proximity to Mexico, the Mexican cultural influence remains particularly strong in this Texan metropolis. Although the City's mayor plays a critical role as an authoritative figure of San Antonio, so does the Mexican consul, especially in regards to cross-border trade.

The composition of the population is unique. After Texas won its independence from Mexico, German settlers soon arrived. Population growth slowed during the Civil War, and when the fighting ended San Antonio became a ranching center that served as the starting point for major cattle drives to Kansas. San Antonio also became a place of refuge for Mexicans protesting their own government's oppression and for a small but substantial Asian community long before other cities in Texas.

Bexar County, Texas, consists of a total population of approximately 1.3 million people, most of whom live in the City of San Antonio. Just over half the population of Bexar County was Hispanic (52%); 39% of the population was Caucasian; and only 7% was African-American (according to 1990 Census data). The median household income in Bexar County was \$32,300 annually, just under the average for the entire state of Texas (\$34,500). Bexar County was very populous by Texas standards, containing over 1,100 people per square mile. (The state average was approximately 80 people per square mile.) The percentage of people subsisting below the federal poverty line was approximately 20%. However, the number of children living below the poverty line was substantially higher, at just under 30%.

SAN ANTONIO METROPOLITAN HEALTH DISTRICT

The San Antonio Metropolitan Health District (SAMHD) is the single public agency charged by State Law, City Code, and County Resolution with the responsibility for public health programs in San Antonio and unincorporated areas of Bexar County. Although the SAMHD is a City/County organization, administrative control is under the City of San Antonio, and the District is operated as a City Department. Health District services include preventive health services, health-code enforcement, clinical services, environmental monitoring, animal control, disease control, health education, dental health, and maintenance of birth and death certificates.

The SAMHD, operating with a budget of \$35 million, was organized into the following four service areas: administration, environmental health, disease control, and family health services.

The SAMHD played a crucial role as the facilitating agency for *PACE EH*. The agency staff served as recorders, organizers, and sources of technical information regarding the environmental health issues. In selecting issues for indicator development and during subsequent steps in the process, the CEHA team considered the magnitude of the impact and the scope of affected populations for each potential issue. Thus, staff provided relevant risk information to the CEHA team.

**FOR MORE
INFORMATION:**

**SAN ANTONIO METROPOLITAN
HEALTH DISTRICT
(210) 207-8780**

BEGINNING THE PACE EH PROCESS

In engaging in a *PACE EH* initiative, the mission of SAMHD and the City of San Antonio was to characterize the environmental health status of the City of San Antonio and Bexar County. Coincidentally, this process complemented the agency's role along with two other environmental health projects launched by the City of San Antonio. The community-based environmental health assessment (CEHA) project goals were identified as the following:

- Quantify existing environmental health risks
- Identify people and communities in Bexar County at risk
- Prioritize all the validated risks
- Enumerate the environmental health concerns of the people in Bexar County
- Develop actions to address risks

Although there had been initial support within SAMHD to participate in the *PACE EH* process, management sensed additional support from agency staff was needed. In discussing who should be involved in the process, some staff members were initially hesitant to rely on the public's perception on prioritizing environmental health issues -- issues for which the agency has responsibility.

ASSEMBLING THE CEHA TEAM

The San Antonio project launched a 5-month process to form the CEHA team and create environmental health issue lists. Development of the assessment team started with identification and recognition of existing key players and neighborhood groups for which a strong and active base had already been established in San Antonio. In the broadest sense, the community had been defined as the County of Bexar. However, because the population of the County exceeded 1 million, a more practical method was necessary to select groups of people who would serve as representatives of the community. Thus, a sample was created consisting of 20 neighborhoods that were scattered geographically across the county.

In striving for a smooth collaboration process, it was then decided to establish the following delegation of responsibility among and between all individuals involved in the process.

- ***Who are the stakeholders?***
 - General public
 - Elected officials
 - Senior city management officials
 - Service providers
- ***When should stakeholders be involved?***
 - In the initial stages of development of the plan as presented by SAMHD.
- ***Who is the Project Owner?***
 - City of San Antonio through SAMHD.
- ***Who is the project sponsor?***
 - SAMHD

- **Who is responsible for design?**
 - SAMHD and selected service providers.
- **Who will be the facilitators?**
 - Private contractors.
- **Who are the Leaders?**
 - SAMHD and the CEHA team.
- **Who has Group decision-making authority?**
 - To be determined by the CEHA team.
- **How will decisions be made?**
 - To be determined by the CEHA team.

GENERATING AN ENVIRONMENTAL HEALTH ISSUES LIST

Once the community sample was defined, opinions about environmental concerns needed to be identified. A survey was developed and disseminated to a sub-population of the sample (i.e., 50 randomly selected persons in each neighborhood).

These community members were invited to participate in identifying environmental health priorities for the metropolitan area of San Antonio. The assessment team was then divided into focus groups in five main areas: air, water, physical environment, hazardous waste, and miscellaneous. The five assessment teams (consisting of approximately 20 participants each) were representative of the community members, SAMHD staff, academia, social service providers, and members of the regulated community; team members met regularly to develop issue lists within the five main categories.

DEVELOPING INDICATORS

For indicator development, SAMHD used standards from Healthy Communities 2000. In addition, the assessment team continued to consult the focus group members for input. Research by the University of Texas (San Antonio campus) students and with work from the focus groups proved to be instrumental in identifying gaps in data. As such, the five groups concentrated on the following issues in developing measurable, pertinent indicators:

- illegal dumping;
- rodent and insect infestations;
- child welfare;
- green space;
- asbestos; and
- crimes and gangs.

PACE EH TOOLS AND MATERIALS USED BY SAN ANTONIO

A. CEHA team list

SAN ANTONIO CEHA TEAM MEMBER ORGANIZATIONS

University of Texas-School of Public Health

San Antonio Open Space Advisory Board

Northside Neighborhoods for Organized Development

San Antonio Metropolitan Health Adistrict

AIA Committee on the Environment

San Antonio Restaurant Association

Animal Defense League

Community Initiatives (branch of Housing Department targeting senior citizens and people with special needs)

University of Incarnate Word

Public Works/Solid Waste Division

City of San Antonio Neighborhood Action Department (housing development, resources, commercial revitalization, brownfields redevelopment, etc.)

West San Antonio Chamber of Commerce

City Public Service Board

DEMOGRAPHICS

Scott County, about 465 square miles, is bordered on three sides by rivers. The Wapsipinicon is on the North, and the Mississippi is on the East and South. For the most part, the Mississippi flows North-South, but in most of Scott County the river runs East and West. Serving as the county seat, Davenport is also the largest city in the county.

According to the 1990 Census, the population of the county was 150,979. More than 92% of the residents were Caucasian, about 5% were black, and roughly 3% were of Hispanic origin (of any race).

SCOTT COUNTY HEALTH DEPARTMENT

In October 1996, Scott County Health Department (SCHD) submitted its application to be a pilot site for field-testing the draft version of *PACE EH*. At the time, the agency employed approximately 30 staff members and had a budget of \$1.8 million.

SCHD saw *PACE EH* as a fundamental tool in evaluating the environmental health needs of Scott County within a framework that would assist the agency to generate environmental health priorities from the community's perspective rather than the agency's. The project was supported from the Board of Health on down, but in the initial stages of the process it became apparent that a "culture change" needed to take place first in order to conduct an external, community-based effort. For example, staff started to begin thinking more in terms of health outcomes than agency processes (e.g., how many restaurant inspections completed per year).

THE *PACE EH* TEAM

All staff participated on one of two teams (one managerial) that were formed. Staff members took turns in taking the lead on particular issues (typically one lead person and one backup) in order to increase responsibility and support from staff. This kept the process exciting and people engaged. Regular meetings started out on a weekly basis, then decreased to biweekly, and then monthly once the process was in full swing. Unfortunately, the pilot coordinator left the agency just when a routine was established, which was seen as a big loss. Since this person had been newly hired, she was better positioned to "sell" new processes to staff - her arrival was well timed with the commencement of the process.

TAILORING THE *PACE EH* PROCESS

Given concurrent restructuring in the agency to align services, budgets, and personnel to the 10 essential public health services (EPHS), SCHD elected not to engage in a comprehensive public community process for priority setting in environmental health. Rather, the agency adopted the *PACE EH* guidebook through an innovative approach. The health department used the *PACE EH* process in two ways: a) as an internal learning tool for the department's environmental health staff and b) to focus on the previously identified community health priority of cardiovascular health.

**FOR MORE
INFORMATION:**

**SCOTT COUNTY HEALTH DEPARTMENT
(319) 326-8618**

As an internal learning tool, SCHD familiarized its environmental health staff to the *PACE EH* process and indicators framework during a staff retreat. The staff took a systems approach to environmental health and conducted a practice run to better understand the community assessment and priority setting process. Specifically, they used the following approach:

- First, relying on their professional understanding, environmental health staff generated a problem/issue list followed by categorizing the major risk/hazard as either human health, ecological, or quality of life.
- Next, staff engaged in a role-playing exercise to identify community perspectives and concerns and to add new issues to the problem list.
- For each issue, they then described the basic cause, source, and reason. The group selected groundwater, lead, and indoor air quality as priority issues.
- Instead of generating real indicators, staff members plugged example priority issues into the indicator framework as a learning tool for systems thinking.
- Staff then answered the following questions in linking the *PACE EH* process with the essential public health services:
 - Which EPHS describes the problem?
 - Which EPHS will best resolve the problem?
 - Which current program in the health department is able to address the problem?
- A final exercise concluded the process by taking a staff poll in matching the 10 essential public health services with SCHD's environmental health programs based on the following questions:
 - Which SCHD's environmental health program BEST demonstrates each essential public health service? (list only ONE program)
 - What is the PRIMARY function (essential public health service) that this SCHD program reflects?

Adapting the *PACE EH* methodology and using the indicators framework helped the environmental health staff to broaden their scope of environmental health and to understand environmental health issues both from a community perspective and a public health systems approach. Staff members comprehended the full context of problems and solutions and made connections between issues that could not have been made by taking a programmatic approach (e.g., following traditional local health department activities).

In addressing cardiovascular health, the *PACE EH* methodology was used as an organizing framework to help a team of community stakeholders develop initiatives for this priority health issue. The methodology (specifically, assembling the team and identifying objectives) provided a good structure to help define and drive the process. The indicator framework was used as a systems analysis tool and to find data gaps, thereby identifying areas to target in a new cardiovascular program. As a result, the department will be hiring new staff to work in the Hispanic community to understand risks to that community and best methods to approach risk reduction.

PROJECT STATUS

As one of the environmental health priorities identified by agency staff, SCHD initiated a comprehensive Lead Poisoning Prevention Awareness Campaign that ran from April to October 2001. The message of the campaign was two-fold:

- Lead Paint Can Poison - Is your family at risk?
- Lead Paint Can Poison - Protect your family when you repaint or remodel.

"Lead Paint Can Poison" served as the underlying theme throughout the entire campaign,

while the sub-messages were intended to specifically reach the target populations - families with children and those people remodeling homes (their own or for renovation).

In an attempt to reach the target populations repeatedly and through various mechanisms, all major media outlets were utilized. In fact, during the campaign months, media outlets contacted the public over 3,000,000 times. The following outreach efforts were used:

Local Television public service announcements (PSAs) - a partnership with Scott County Empowerment was created to include PSAs on the hazards of lead paint mixed in with other PSAs.

- Newspapers - The Quad-City Times did a story on the dangers of lead poisoning during remodeling. The article contained information on a lead-safe remodeling class offered by Interfaith Housing, which resulted in at least two people taking the class from having read the article. The North Scott Press and Bettendorf News included advertisements on lead poisoning.
- Radio PSAs - chosen on their ability to reach the target populations, five radio stations aired the PSAs.
- Happy Joe's Restaurants - all six locations in Scott County were provided with place mats and box toppers during October (Lead Poisoning Prevention Month) with simple lead-safe remodeling tips.
- Other forms of advertisement - an ad was created and presented during the previews on all eighteen screens at the Showcase Cinemas 53. Billboards were used during the summer months to reinforce the "Lead Paint Can Poison" theme. The billboards used were located in areas with a large percentage of pre-1950 housing.

With increased awareness in lead paint poisoning generated by the media, the next step is to capitalize on additional educational opportunities. Presentations to Scott County landlords and to foster parents have been scheduled for January and February 2002. More presentations need to be conducted targeting realtors and lending institutions on the importance of Title X Lead Disclosure.

LESSONS LEARNED

For SCHD, the chief lesson learned was that it takes much more time and effort than anticipated to obtain staff support. Getting ownership among agency staff was necessary before going external to the community. In doing so, getting people to think outside the box - to think in terms of outcomes - became an essential and important challenge. Incorporating the concepts of the ten essential services, outcomes, and indicators eventually became ingrained into the staff's daily, weekly, and monthly activities. Staff no longer equated their work in terms of number of inspections conducted, but rather by addressing community concerns and making connections with agency services.

The value of *PACE EH* for Scott County was that it provided a tangible example of what was needed in order for SCHD to conduct a CEHA - agency staff would have to undergo significant culture change. The *PACE EH* framework served as a catalyst by illustrating where SCHD needed to stretch and provided a structure for the internal reorganization.

PACE EH TOOLS AND MATERIALS USED BY SCOTT COUNTY

- A. Identify Environmental Health Problem/Issue - Internal agency survey and results**
- B. Identify SCHD's Environmental Health Programs By Essential Services**
- C. SCHD Identified Issues - Table 1**
- D. Action Plan for Lead Poisoning Prevention through Education (Planning Grid)**
- E. Sample Media Outreach Efforts**

A IDENTIFY ENVIRONMENTAL HEALTH PROBLEMS/ISSUES BY ESSENTIAL SERVICES

- A. List Environmental Health Problems/Issues as an Environmental Health Specialist for a County Health Department

1. *We would like to discuss the Environmental Health of Scott County.*
 - a. *Please list all the Environmental Health problems or issues or concerns in Scott County that you can think of.*
 - b. *Please check ✓ the MAJOR RISK OR HAZARD from the problem or issue or concern. "Is this problem/Issue/concern a major risk or hazard to....."*
 - *Health of individuals in the community?*
 - *Ecosystem?*
 - *Quality of Life of individuals in the community?*

1. List of Problems/Issue

2. RISK

a. _____ ___Health/ ___Ecosystem Quality/ ___Life

N = 36 Environmental Health Issues

[Water = 6, Air = 4, Land =6, Waste Management =6, Consumer Protection = 11, Community Relations = 4]

2. Community Perspective Discussion:

"If you were the community person identified on your paper, what would be YOUR greatest environmental health issue?"

[A high school science teacher, Genesis Hospital System - Vice President of Community, President of local Sierra Chapter, Family of child with severe asthma, Wastewater treatment plant director, local farmer, Regional DNR representative, County Sheriff, Farm & Fleet (farm supply store) Manager, Safety Officer for ALCOA (local industry), Local banker running for Board of Supervisors, Local Soil Conservation Board, Member with Quad City Development Group , Neighbor to Winborn's Alley (area with constant garbage/nuisance complaints)]

- B. Identify Risk for Each Environmental Health Issue

1. Group by Health, Ecosystem, or Quality of Life. All environmental health issues in the community may fall into each group depending on the individual's point of view and concerns.

- C. Identify Public Health - Essential Service(s) for Each Environmental Health Issue

1. By Cause or Source or Contribution ** See Table 1. (ES.1)

Which Public Health - Essential Service would help explain or describe or identify the BASIC Cause/Source/Reason that is a problem?

2. By Solution ** See Table 1. (ES.2)

Which Public Health - Essential Service would help explain or describe or identify the BASIC Cause/Source/Reason that this issue is a problem?

Monitor	=	2
Diagnosis & Investigate	=	0
Evaluate	=	1
Develop	=	4
Enforce	=	9
Research	=	4
Link	=	2
Assure	=	0
Mobilize	=	9
Inform	=	6

3. By Program **See Table 1 (ES.3)

- Does Scott County Health Department's Environmental Health Program currently address the issue?

Yes = 16 No = 20

B

IDENTIFY SCHD'S ENVIRONMENTAL HEALTH PROGRAMS BY ESSENTIAL SERVICES

- A. Which one Scott County Health Department's Environmental Health Program BEST demonstrates each Public Health - Essential Service?

Monitor environmental health status to identify community health problems. *Mosquito Surveillance (4), Lead (2), Water Wells (3), Non-public Wells, Food Service, Air Pollution*

Diagnose/Investigate environmental health problems & hazards in the community- *Foodborne Illness (6), Lead (2), On-Site Wastewater, Food Service, Real Estate Nuisance*

Evaluate effectiveness/accessibility/quality of personal/population health services. *Water Wells (3), None (2) Subdivision Review, food Service, Mosquito surveillance, Lead, Real Estate, Foodborne Illness, Don't Know*

Develop EH policies and plans that support individual & community health efforts *Recycling (2), Subdivision Review (2), Food, Lead, Onsite Wastewater, Water Wells, Tanning, Tire Program, Solid Waste Haulers, Public Health Nuisances*

Enforce environmental laws and regulations that protect health and ensure safety. *Onsite Wastewater (4), Nuisances (4), Food Service (4)*

Research for new insights and innovative environmental health solutions. *Recycling program (3), Tire Program (3), Onsite Wastewater (2), Air Pollution, None, Lead, Subdivision Review*

Link people to personal EH services & assure provision when otherwise unavailable. *Radon (4), Nuisance (3), Animal Bite (2), Tire, Foodborne, Real Estate*

Assure a competent public and personal environmental health workforce. *Food Service Establishment (3), Animal Bites (2), Nuisance (2), None, Air Pollution, Solid Waste Haulers, Real Estate, Don't Know*

Inform, educate, and empower people about environmental health issues. *Radon (3), Lead (3), Food Service Establishment (2), Mass Gathering, Recycling, Nuisance, Don't Know*

Mobilize community environmental health partnerships. *Tire Program (6), Recycling (4), Foodborne Illness, Lead*

- B. What is the PRIMARY function (Public Health - Essential Service) that this program reflects?

- | | |
|---|--|
| <input type="checkbox"/> Water Wells | <input type="checkbox"/> Mosquito Surveillance |
| <input type="checkbox"/> Onsite Wastewater Treatment & Disposal | <input type="checkbox"/> Subdivision Review |
| <input type="checkbox"/> Water Wells (non-Public) | <input type="checkbox"/> Food Establishment |
| <input type="checkbox"/> Real Estate Transaction | <input type="checkbox"/> Vending |
| <input type="checkbox"/> Food Service Establishment | <input type="checkbox"/> Tire Program |
| <input type="checkbox"/> Hotel/Motel | <input type="checkbox"/> Tattoo Parlors |
| <input type="checkbox"/> Mass Gathering | <input type="checkbox"/> Tanning Parlors |
| <input type="checkbox"/> Foodborne Illness Investigation | <input type="checkbox"/> Insect and Rodent Control |
| <input type="checkbox"/> Swimming Pools | <input type="checkbox"/> Air Pollution Monitoring |
| <input type="checkbox"/> Public Health Nuisances | <input type="checkbox"/> Lead Poisoning Prevention |
| <input type="checkbox"/> Animal Bites | <input type="checkbox"/> Recycling Program |
| <input type="checkbox"/> Radon | |

SCHD'S ENVIRONMENTAL HEALTH SPECIALISTS - 1998

IDENTIFICATION OF ISSUES

TABLE 1



ES-1. By Cause of Source or Contribution: Which Public Health - Essential Service would help explain or describe or identify the BASIC Cause/Source/Reason that this issue is a problem?

ES-2. By Solution: Which Public Health - Essential Service could you provide the Best Solution to the Issue?

ES-3 By Program: Does Scott County Health Department's Environmental Health Program currently address the issue?

ISSUE	ES-1	ES-2	ES-3
Groundwater Quality (nitrates, bacteria, chemical chemical)	Diagnosis, Mobilize Enforce, Assure	MOBILIZE Inform	Yes
Lead (ground & air)	Inform	INFORM	Yes
Indoor Air Quality (‘Sick-Building’, molds)	Assure, Diagnosis Link	LINK Monitor, Develop, Diagnosis	No
Outdoor Air (Leaf burning)	Enforce, Develop, Inform	DEVELOP, Inform	No
Ozone	Develop, Inform	INFORM	No
Wildlife/Aquatic	Develop, Inform	DEVELOP	No
Protection of Habitat Misuse of Land	Inform, Monitor	MOBILIZE LINK	No
Agricultural Runoff (manure, chemicals)	Inform, Research Enforce, Develop	RESEARCH Enforce	No
Urban Sprawl	Develop, Diagnose	ENFORCE	No
Food-borne Illness	Inform	INFORM Research, Mobilize	Yes
Rural Development /Housing (sewer & water)	Mobilize Develop Enforce, Research	MOBILIZE Develop, Enforce	Yes No
Environmental Health Support & Resource	Mobilize Research Link	EVALUATE Mobilize, Link	No
Food Industry/Handlers	Inform, Mobilize	DEVELOP MOBILIZE, Assure	Yes
Hazardous Waster Sites (uncontrolled)	Link, Mobilize Enforce, Monitor Research	ENFORCE Monitor, Mobilize	No
Noise	Develop	DEVELOP	No
Solid Waste (recycle, garbage, tire)	Research, Inform	RESEARCH, Inform Develop, Enforce	Yes
Vector Disease (rodent, lyme, mosquito)	Monitor, Enforce, Mobilize Mobilize	RESEARCH, Inform Diagnosis	Yes
Flooding/Natural Disasters (Wapsi, Mississippi)	Mobilize, link	MOBILIZE	Yes

C

Soil Erosion	Inform	INFORM, Research	No
More Community Involvement	Mobilize, Inform	MOBILIZE	Start
Emergency Assistance for EH Issues	Link, Inform	MOBILIZE	No
Injury Prevention Involvement	Mobilize, Inform	MOBILIZE	Start
Interagency Relations	Develop, monitor, Inform, Evaluate	INFORM, Research	No
Contamination from Underground Storage Tanks	Monitor, Inform, Enforce	No consences	No
Abandoned Walls	Enforce, Inform, Monitor	ENFORCE	Yes
Illegal Burning	Monitor, Inform	ENFORCE	Yes
Illegal Dumping	Monitor, Inform Enforce	ENFORCE	Yes
Animal Control	Inform	ENFORCE	Yes
Surface Water Pollution	Inform. Develop, Monitor, Research	MONITOR, Develop Research	Yes
Non-Point Source Water	Monitor, Diagnosis	MONITOR	No
Failing Septic Systems	Enforce	ENFORCE	Yes
Landfills	Monitor	RESEARCH, Develop, Evaluate	No
HACCP	Inform	INFORM	Yes

PLANNING GRID

TOPIC: Lead Poisoning Prevention through Education

TIME FRAME: April through October 2001

SETTING	Community At Large	Community At Large	Community At Large	Professional Environment	Professional Environment	Professional Environment
AUDIENCE	Buyers of pre-1978 housing	Renters	Anyone with a child 0-5 years old	Contractors and Workgroups	Landlords	Lenders, Realtors, Legal Community, Abstract Companies, Appraisers, Banks, Home Inspectors, Mortgage and Home Equity Companies
HEALTHY IOWANS 2010 OBJECTIVE	Reduce the prevalence of blood lead levels greater than or equal to 10 micrograms/deciliter to 4% in children under the age of 6 years.					
STRATEGY						
EDUCATION AND AWARENESS (Increase level of awareness and knowledge)	<ul style="list-style-type: none"> • Media • Billboards • Website • Print materials • Video • Public service announce • Restaurant placemats • Transit ads • Classified ads • Phone book ads • Shopping cart placards • <i>Woman's Day</i> article • Home and Garden Channel • Special home improvement section in newspaper 	<ul style="list-style-type: none"> • Media • Billboards • Website • Print materials • Video • Public service announce • Restaurant placemats • Transit ads • Classified ads • Phone book ads • Shopping cart placards • <i>Woman's Day</i> article • Special home improvement section in newspaper 	<ul style="list-style-type: none"> • Media • Billboards • Website • Print materials • Video • Public service announce • Restaurant placemats • Transit ads • Phone book ads • Shopping cart placards • <i>Woman's Day</i> article • Home and Garden Channel • Special home improvement section in newspaper 	<ul style="list-style-type: none"> • Media • Newsletters • Formal presentation • Website • Employee training opp. • Print materials • Home and Garden Channel • Special home improvement section in newspaper 	<ul style="list-style-type: none"> • Media • Newsletters • Formal presentation • Billboards • Print materials • Special home improvement section in newspaper • Website 	<ul style="list-style-type: none"> • Media • Newsletters • Formal presentation • Billboards • Website • Employee training opp. • Print materials

AUDIENCE	Buyers of pre-1978 housing	Renters	Anyone with a child 0-5 years old	Contractors and Workgroups	Landlords	Lenders, Realtors, Legal Community, Abstract Companies, Appraisers, Banks, Home Inspectors, Mortgage and Home Equity Companies
STRATEGY						
LOCATION (Where can we reach the audience)	Hardware stores Home improvement stores Community Ed. Classes Home buyer seminars Schools/PTAs Physician Offices Banks/Lending Institutions ISU Extension Service Library Visitor's Bureau Welcome Center	Hardware stores Home improvement stores Schools/PTAs Physician Offices ISU Extension Service Farm Bureau Library Movie theatres Restrooms Library Restrooms Farm Bureau Movie theatres Restrooms Visitor's Bureau Welcome Center	Hardware stores Home improvement stores Community Ed. classes Schools/PTAs Physician Offices Banks/Lending Institutions Baby packets ISU Extension Service	Hardware stores Home improvement stores Association Apprenticeship programs Movie theatres Restrooms ISU Extension Service Farm Bureau Movie theatres	Hardware stores Home improvement stores Home buyer seminars Associations Banks/Lending Institutions	Realtor/Lender training Associations Movie Theaters Restrooms
PARTNERS (Potential partners to collaborate with to get message out)	Realtors Lead Coalition Bi-State Regional Comm. City Housing	Landlords City Housing Lead Coalition Bi-State Regional Comm.	WIC Private providers Lead Coalition Department of Human Services Mississippi Bend Area Education Agency Cornerstone Program	Lead Coalition Housing Cluster Chamber of Commerce Bi-State Regional Comm Housing inspectors	Lead Coalition Housing Cluster Chamber of Commerce Bi-State Regional Comm	Lead Coalition Housing Cluster Chamber of Commerce Bi-State Regional Comm

Lead paint can poison!

**Protect your family when
you remodel.**

For more information call
563-326-8618



Consumer:

So you are thinking of re-modeling your home. You have spent countless hours picking out the right paint, getting the right building materials, and obtaining the correct permits. Before you start, make sure that home improvement project isn't a costly mistake. No, I'm not talking about that gaping hole you have already left in the wall. I am talking about lead poisoning. Lead poisoning is a disease that affects thousands of children in their own homes causing learning and behavioral problems. The culprit is most often dust from sanding peeling or chipping lead paint. Repainting and repairs can create lead dust that is ingested by children. If you plan to repaint or remodel be sure to take the right precautions. Make sure to contain and clean up paint chips and dust. For information on lead safe remodeling call 563-326-8618.

Brought to you by the Scott County Health Department.

Quad City Times and Bettendorf News

Newspaper advertisements

WHAT YOU DON'T KNOW ABOUT LEAD POISONING CAN HURT YOU.

If you are buying or living in a home built before 1978 make sure that peeling or damaged paint is repaired promptly and safely. If you repair or remodel, learn how to work safely with lead paint.

Call 563-326-8618
www.scottcountyiowa.com

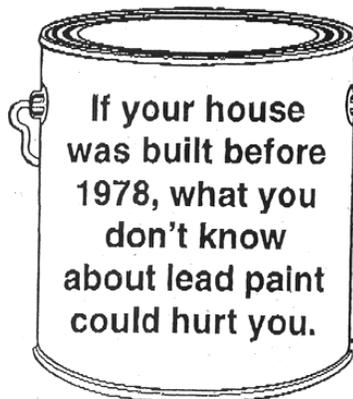
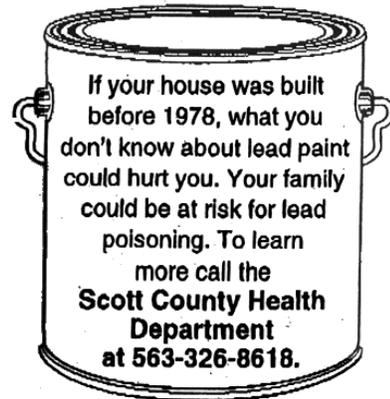


Was Your House Built Before 1978?

What you don't know about lead paint could hurt you. Your family could be at risk of lead poisoning. To learn more about lead paint and other lead hazards call the Scott County Health Department at 563-326-8618.



The Leader



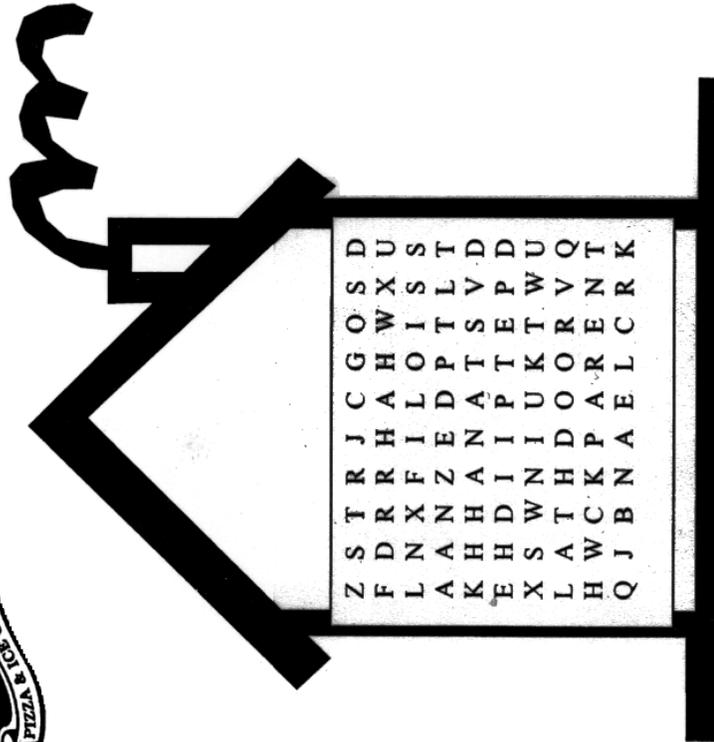
Your family could be at risk for lead poisoning. To learn more about lead paint and other lead hazards call the Scott County Health Dept. 563-326-8618.

North Scott Press
July through September

North Scott Press-October



**Make Your Home a
Healthy Home**
Take these five steps:



- child
- door
- paint
- washhands
- chip
- dust
- parent
- window
- clean
- flake
- pet
- dirt
- lead
- test

October is Lead Poisoning Prevention Month

1. **Keep paint in good shape.**
 - ◊ Check often for peeling paint.
 - ◊ Watch out for water damage that can make paint peel.
 - ◊ Make sure any problems are fixed promptly.
2. **Work safely with lead paint.**
 - ◊ Wet down the paint before you sand or scrape to control lead dust.
 - ◊ Avoid creating dust or paint chips. A power sander or grinder should have a hood to trap dust and a HEPA vacuum attachment.
 - ◊ Seal off the work area by covering floors, doors, windows and vents with heavy plastic and keep children and pregnant women away from the area.
 - ◊ Cover furniture with heavy plastic or remove it from the work area.
 - ◊ Wash down floors and walls with soap and water when you're done.
 - ◊ Dispose of trash and dust in plastic bags.
3. **Keep your home free of lead dust.**
 - ◊ Clean floors and window sills often with soap and water and rinse with fresh water.
 - ◊ Be sure children wash their hands before eating, after playing outside and at bedtime.
4. **Watch where your children play.**
 - ◊ Don't let children play in bare soil.
 - ◊ Look for areas with grass or other safe coverings.
5. **Test your child for lead.**
 - ◊ Ask your doctor or health department if your child should be tested for lead.

For more information, Call the Scott County Health Department
563-326-8618

www.scottcountyiowa.com



PART V

LESSONS LEARNED ACROSS PILOT SITES

With regard to the variety of practices and tactics developed within individual pilot-site *PACE EH* processes, several “lessons learned” were prevalent and likely represent general trends resulting from use of the methodology.

Community collaboration is time consuming.

PACE EH pilot-site coordinators reported that, on average, the time they initially allocated to the phases of their assessment processes that utilized community collaboration were only about half as much as they eventually needed (i.e., tasks that incorporated community collaboration took twice as long as originally expected). Pilot-site coordinators attributed the extra time required to many factors, but primarily to the difficulty of creating viable communication strategies between the local environmental health work force and other community members.

A PACE EH process requires effective facilitation and meeting-management skills.

A successful *PACE EH* process requires organizing numerous work-oriented, large group meetings over an extensive time period. The facilitating agency must be prepared to take responsibility for both the physical and organizational requirements that such a process demands. Pilot-site coordinators stressed the value of having experienced meeting facilitators, exhaustive team communication networks, a comfortable meeting space, and adequate meeting-time snacks and drinks.

Communities respond favorably to inclusion in a PACE EH process.

According to pilot-site coordinators, community members are interested in contributing to the identification and development of local environmental health action plans. None of the coordinators had trouble convening a CEHA team, and each reported that they had more than enough community volunteers to both staff the team and assist with team activities.

A PACE EH process requires commitment of time and skills.

The pilot *PACE EH* processes took anywhere from 12 to 24 months and utilized extensive skill sets from throughout the community and among the members of the facilitating agency. Pilot-site coordinators reported benefiting from access to individuals and institutions versed in many areas, including survey methodology, community outreach, media relations, environmental protection, and local zoning and planning commissions.

A PACE EH process is most effective when combined with additional support and guidance.

Many of the pilot-site coordinators acknowledged that discussions with people who were experienced in community-based assessment activities added value to the *PACE EH* process. In fact, the pilot-site coordinators used one another as conduits in a communication network that assisted in the promotion of tools, tips, and “best practices” supporting local CEHA team activities. The pilot sites also benefited from access to NACCHO for the provision of technical assistance and procedural support at different stages of local *PACE EH* processes.

The effectiveness of PACE EH is a direct result of its adaptability.

The open-ended design of *PACE EH*, which encourages local adaptation and community empowerment, ensures that all communities have the ability and resources to make the methodology useful and beneficial. Urban, rural, and tribal communities have successfully employed the methodology. In addition, the *PACE EH* process has been conducted in conditions of both extensive community collaboration and extensive facilitator control. It has been utilized to develop both large- and small-scale environmental health activities.

Each of these “lessons learned” reflects distinct benefits of the *PACE EH* process identified and described throughout this document. Community collaboration is time consuming, but it is also vital to successful community-based environmental health assessment. A *PACE EH* process does require meet-

ing and facilitation skills, but these skills are developed via the process itself and will serve the organizing agency well beyond the requirements of the assessment project. Communities do respond favorably to inclusion in the *PACE EH* process and as a result are likely to initiate future collaboration with the health agency. A *PACE EH* process does require commitment of time and skills, but it also rewards that commitment by enhancing the functions of the local health agency, improving the environmental health of the community, and strengthening connections. A *PACE EH* process is most effective when combined with additional support and guidance; increasing use of the methodology will result in a growing cadre of local environmental health officials and community members equipped with the skills and experience necessary to provide it. Likewise, the effectiveness of *PACE EH* is a result of its adaptability; increasing use of the methodology will not only demonstrate its flexibility, but can also provide future adapters with as yet unidentified examples of unique methodologic applications.

Recognition of these commonly experienced lessons learned and benefits gained is perhaps the most valuable insight by which to conclude *PACE EH in Practice*. In 1998, 10 local health agencies agreed to pilot an untested community-based environmental health assessment methodology. Most of them never would have predicted the obstacles that would be overcome and successes that would be achieved by their decision to implement *PACE EH*. Nevertheless, the achievements of the pilot sites are an indication that *PACE EH* offers invaluable assistance for the creation and maintenance of relevant and viable local environmental health agendas in the foreseeable future. Field-testing resulted in 10 unique experiences. Yet, despite wide procedural variation, every local health agency testing the *PACE EH* methodology overcame obstacles standing between their communities and improved environmental health. All 10 sites can identify very specific and inspiring successes they achieved in collaborating with their community to assess local environmental health status. *PACE EH* has proven itself to be an extremely valuable tool for addressing local environmental health issues.