

Summary Document on Indicators and Data Sources for Assessing Environmental Justice Concerns

This document is composed primarily of excerpts taken verbatim or paraphrased from the U.S. EPA’s document, “Toolkit for Assessing Potential Allegations of Environmental Injustice,” which was published in 2004 and is available on U.S. EPA’s website at www.epa.gov. Many practitioners in the environmental management and consulting fields are not yet familiar with the types of data that U.S. EPA on occasion uses to assess whether environmental injustices exist in a given case. Thus, our intent in providing this summary is to acquaint readers with the types of information EPA is looking for and the sources of data, both qualitative and quantitative, that it is using; however, we do advise that persons who wish to perform their own assessments review the complete “Toolkit.”

We would also like to note that since some time has elapsed since the original “Toolkit” document was published, we have updated some of the data sources. Of particular importance: The U.S. Census Bureau has changed the way it is collecting and reporting some information. The old reports, DP-1 through DP-4, which reported data on demographics, income, level of educational achievement, housing characteristics, occupation, and the like, are no longer issued and have been replaced by the American Community Survey (ACS). The ACS data is also available through the www.census.gov website and provides most of the data that the old DP-1 through DP-4 forms used to provide. At the time that this summary was written, the ACS data have only just come on line. We will provide updates on this, our Environmental Justice website, on any special tricks required to use these new data sets.

We will also update this summary as we learn of new data sources.

Background on Environmental Justice

“Environmental justice is the goal to be achieved for all communities so that: 1) people of all races, colors, and income levels are treated fairly with respect to the development and enforcement of protective environmental laws, regulations, and policies; and 2) potentially affected community residents are meaningfully involved in the decisions that will affect their environment and/or their health.” From page 1, “Toolkit for Assessing Potential Allegations of Environmental Injustice.”

In accordance with the Department of Justice “Guidance Concerning Environmental Justice¹”, there are a number of factors that should be considered in determining whether any individual situation does raise such an issue:

¹ Department of Justice, “Guidance Concerning Environmental Justice,” January 9, 1995, available online <http://www.usdoj.gov/endor/79648environmentaljusticestrategy.pdf>

- “Whether individuals, certain neighborhoods, or federally recognized tribes suffer disproportionately adverse health or environmental effects from pollution or other environmental hazards;
- “Whether individual, certain neighborhoods, or federally recognized tribes suffer disproportionate risks or exposures to environmental hazards, or suffer disproportionately from the effects of past under enforcement of state or federal health or environmental laws.
- “Whether individuals, certain neighborhoods, or federally recognized tribes have been denied an opportunity for meaningful involvement, as provided by law, in governmental decisionmaking related to the distribution of environmental benefits or burdens. Such decisionmaking might involve permit processing and compliance activities.

“While it is important to avoid overly narrow conceptions of possible environmental justice situations, the mere presence of environmental hazards in a particular community does not in and of itself mean that an environmental justice problem is addressable in litigation. Additional factors must be considered, such as the accumulation of a number of environmental hazards in an affected area because of a lack [of] public participation by the community, the lack of adequate protection under the laws designed to protect health and the environment, or unusual vulnerability of the community to such hazards.²”

Definitions Used In Toolkit

These definitions are taken directly from the Toolkit and are provided to assist readers when they review the Indicators, which follow.

Affected area or community of concern: The affected area or community of concern is the geographic area of analysis that the proposed project or action will or may have an effect on.

Adverse effect or impact: Adverse effect or impact is a term used to describe the entire compendium of “significant” (as defined under the National Environmental Policy Act) individual or cumulative human health or environmental effects or impacts which may result from a proposed project or action. Examples of adverse effects or impacts include but are not limited to:

- Bodily impairment, infirmity, illness, or death;
- Air, noise, soil, and water pollution or contamination;
- Destruction or disruption of man-made or natural resources;
- Destruction or disruption of aesthetic values;
- Destruction or disruption of community cohesion or a community’s economic vitality;
- Destruction or disruption of the availability of public and private facilities and services;
- Vibration;
- Adverse employment effects;

² Id. At Subsection IV.B.1, pp 5-6.

- Displacement of persons, businesses, farms, or nonprofit organizations; and
- Increased traffic congestion, isolation, exclusion, or separation of individuals within a community or from a broader community.

Disproportionately high and adverse effects or impacts: Means an adverse effect or impact that: 1) is predominantly borne by any segment of the population, including, for example, a minority population and/or a low-income population; or 2) will be suffered by a minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect or impact that will be suffered by a non-minority and/or non-low-income population.

Low-income: Means a person whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines.

Low-income population: Means any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant farm workers of Native Americans) who will be similarly affected by a proposed project or action, or EPA program, policy, or activity.

Minority: Means a person, as defined by the U.S. Bureau of Census, who is a: 1) Black American (a person having origins in any of the black racial groups of Africa); 2) Hispanic person (a person of Mexican, Puerto Rican, Cuban, Central or South America, or other Spanish culture or origin, regardless of race); 3) Asian American or Pacific Islander (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); or 4) American Indian or Alaskan Native (a person having origins in any of the original people of North America and maintains cultural identification through tribal affiliation or community recognition).

Minority population: Means any readily identifiable group of minority persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed project or action, or EPA program, policy, or activity.

Reference community: Means another community of equal size, the surrounding county, the region or metropolitan statistical area, the state, or the entire United States.

Within the context of this suggested approach the term “geographic areas” is used instead of the term “environmental justice communities” as follows when conducting environmental justice assessments:

- Geographic areas where any readily identifiable group of minority persons reside at a higher percentage than the state average minority populations which are defined by the U.S. Bureau of Census as individuals who are members of the following population groups: American Indian or Alaskan Native; Asian American or Pacific Islander; Black American not of Hispanic origin; or Hispanic. This definition includes, if circumstances warrant, geographically dispersed/transient persons who may not be accounted for in census data. These populations include seasonal, migrant

farm workers. Sources of information regarding small pockets of minority populations can be obtained through local churches, state and local colleges, community centers, and expanded public participation efforts.

- Geographic areas where any readily identifiable group of individuals, whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines, who reside at a higher percentage than the state average. Because the U.S. Bureau of Census data related to poverty is only gathered every 10 years and may not provide the level of detail required for analysis, local sources of information (e.g., university, local or state departments of economic development) can also be used to augment census data.³
- Geographic areas where the percentage of children (6 years of age and younger) and /or older individuals (65 years and older) reside at a higher percentage than the state average.

How U.S. EPA Assesses Potential EJ Cases

U.S. EPA uses a four-phase process, as follows:

- Phase I – Problem Formulation
- Phase II – Data Collection
- Phase III – Assessment of the Potential for “Adverse” Environmental and Human Health Effects or Impacts
- Phase IV – Assessment of the Potential for “Disproportionately High and Adverse” Effects or Impacts

The initial work involves a “screening-level assessment” with information that is readily available (this level uses both qualitative and quantitative information). If, after the screening-level assessment the decision is that an environmental injustice situation might exist (and EPA may have a role to play in alleviating the injustice), a refined assessment may be conducted. The refined assessment uses primarily quantitative data.

Screening-Level Assessment:

Purpose is to determine whether EPA should: 1. Conduct further Refined Assessment, 2. Refer matter to another federal, tribal, or state entity, or 3. Find no environmental injustice. Screening-Level Assessment should define the scope of the Refined Assessment. Decision is based on readily available information.

³ Beginning with the 2010 Census, the Census Bureau is no longer using the “long form” to collect data. Instead, the Census Bureau is using a “short form,” augmented with yearly surveys of representative samples of the population. These data are then incorporated into the American Community Survey, which reports data collected over a five year period (each new year’s data are added to the five-year data, replacing the oldest year’s data). While the American Community Survey doesn’t represent data from every resident in the U.S., the Census Bureau bases its samples on the data it gathers every 10 years, ensuring sample sets that are highly representative. Moreover, the timeliness of the American Community Survey data (as opposed to data that can be 10 years old), and regularity of the updates (yearly), yields current data.

Refined Assessment:

Purpose is to determine: 1. Whether adverse impacts or effects exist and 2. Whether there are disproportionately high adverse impacts or effects (environmental injustice). Refined Assessment should determine appropriate EPA action. Decision is based on detailed, quantitative information.

Indicators Used to Determine Whether Environmental Injustices May Occur (or Have Occurred)

Note: The Office of Environmental Justice recognizes that only a fraction of these indicators will actually be used in a single assessment, but it wants staff members to consider all of these factors so that indicators that could be relevant won’t be overlooked. In addition, EPA notes that persons performing assessments need to look holistically (our term) at communities before they make their determinations, as described in the following excerpt:

“...it is important that appropriate data collection be completed before determining whether an environmental injustice situation has occurred or is likely to occur. In particular, a situation should not be excluded from further consideration based solely on demographics (i.e., if a community does not appear to be significantly lower in income or higher in minorities than the comparison community) – since the goal of environmental justice is to ensure equal protection for all populations. The defining issue is, rather, whether a particular community is likely to suffer from disproportionately greater environmental effects or impacts, regardless of its demographics.” (Page 19, Toolkit).

“Historically, environmental justice concerns have focused on populations considered to be minority and/or low-income; however, since environmental justice is defined as the fair treatment of all people, this characterization would not necessarily cause an assessment to be considered “closed” if the population were not considered minority or low-income area. The final decision should be, rather, whether the affected area is likely to or is already impacted by greater adverse effects than the reference community. In many cases, a community that is predominantly low-income or minority may have the characteristics that will increase its vulnerability or sensitivity to environmental impacts. However, to the extent possible, the actual health indicators and other data should be collected to demonstrate how these contribute to greater adverse impacts, rather than relying on just demographic data. Furthermore, some demographic and other social data will be useful in determining how to address the situation (e.g., to increase public participation). (Pages 21-22 Toolkit).

U.S. EPA adapted the Indicators that it uses in the Toolkit from the International Organization for Economic Co-operation and Development (OECD). The indicators are categorized into four broad areas:

- Environmental
- Health
- Economic
- Social

“These four categories represent the areas in which conditions may occur that cause or exacerbate environmental injustice situations. In addition, a community’s level of public participation and access to environmental information can diminish or augment environmental injustices. Each category includes several different sets of indicators to assist in organizing the data collection and assessment process.” (Toolkit page 28.)

Environmental Indicators

Environmental indicators provide data about the physical attributes of a community, including potential sources of environmental stressors, the relative levels of stressors to which community residents are being exposed, and adverse impacts that may have resulted. Specific types of data that could be considered Environmental Indicators include:

Sources of Environmental Stress Placed on the Community

Initial, screening measure can be the number of regulated facilities within a community (large numbers MAY mean greater overall stress, even if the facilities are all operating within their permitted conditions).

Indicators	Comments	Data Sources
Length of time regulated facilities have operated within a community	If facilities have been operating for a long time, this could mean the accumulation of persistent contaminants. Also a greater likelihood that spills or other accidental releases have occurred or that excessive emissions occurred before regulations were put into place.	Envirofacts www.epa.gov/enviro/
Number of current and past permit exceedences by regulated facilities	May indicate exposures could significantly exceed permitted levels	The Right-to-Know Network www.rtknet.org Provides access to Toxics Release Inventory, Spills and Accidents (ERNS), Risk Management Program (RMP), Hazardous Waste (BRS), Hazardous Waste Violations and Permits (RCRIS) Envirofacts www.epa.gov/enviro/ State and local environmental and health agencies (including county health agencies) may have this information available online or via interviews or FOIA requests.
Number or extent of non-	This can include localized sources	EPA’s Office of Water maintains

point sources of pollution	of air pollution, such as highways, transportation corridors, or dust sources that can add increased environmental burden	a Nonpoint Source Site with techniques on how to manage nonpoint source pollution Envirofacts www.epa.gov/enviro/ National-Scale Air Toxics Assessment (NATA) produced by U.S. EPA every three years includes data for certain air toxics from point, area, background, and mobile sources.
Noise levels	Although these may not be regulated, EPA believes that their impact on the community may have an effect on how well the community handles other, regulated, environmental burdens	Local health or environmental departments may have information. Otherwise, anecdotal information may be available through interviews if noise is, indeed, an issue of concern in the community.

Indicators of Potential Exposure to Stresses

(Note: Exposure indicators may also measure other factors that adversely affect the quality of life, including nuisance concerns, such as odor, noise, and dust; degradation of aesthetics; and loss of open space and other amenities.)

Indicators	Comments	Data Sources
Proximity of regulated facilities to the majority of the community’s population	In general, populations residing close to regulated facilities are more likely to be exposed to contaminants than populations living at some distance.	LandView 6, which can be downloaded from the Right-to-Know Network (www.rtknet.org), contains information about EPA-regulated sites, plus demographic data and street-level maps from the Census Bureau.
Proximity to multiple contaminant sources	See above.	See above. Other data sources include RCRIS, CERCLIS, AIRS
Potential or actual cumulative exposures across multiple locations	Requires sophisticated modeling tailored to local area.	Requires sophisticated modeling tailored to local area
Potential or actual exposure to multiple stressors	Requires sophisticated modeling tailored to local area	Requires sophisticated modeling tailored to local area
Number of biomarkers of exposure that are evident	Requires blood and tissue sampling and testing, bioassays.	In some cases (and for some contaminants), such data may be available.

Environmental conditions resulting from stressors

This set of indicators includes analyzing data on the quality of environmental media to which the community is exposed.

Indicators	Comments	Data Sources
“Quality” of the air, water, and other environmental media	Provides data on the quality of the environmental media to which community residents are likely exposed.	Various federal and state databases available for air and water showing air monitoring and water testing data (for public water supplies).
Density of contaminants in biota (living organisms)	Provides data on the uptake of contaminants in local biota.	– Biomonitoring of Environmental Status and Trends www.cerc.usgs.gov EPA’s National Listing of Fish and Wildlife Advisories www.epa.gov/ost/fish nationally and by state.

Environmental Vulnerability

Certain environmental indicators may provide general information about the physical environment itself and usually are collected to be analyzed in conjunction with other data. For example, certain features of the physical environment (such as the presence of a mountain range and its effect on air quality) can increase or decrease the likelihood or magnitude of impacts from environmental contamination.

Indicators	Comments	Data Sources
Climate	Considerations may include prevailing wind patterns—and emissions transport	National Climatic Data Center has general resources to assist in making a qualitative assessment of climate data. www.ncdc.noaa.gov/
Geomorphic features	The presence of mountains and valleys may trap or block emissions to the air.	The National Geophysical Data Center has general resources to assist in making a qualitative assessment of geological data. www.ngdc.noaa.gov/
Hydrogeomorphic features	Some sources of drinking water may be more vulnerable to contamination than others. In the case of surface waters, residents may also be exposed to contaminants by eating fish taken from the waters.	The USGS’s Water Resources has databases relating to watersheds and water conditions. http://water.usgs.gov/
Presence of ecologically	Certain areas may be particularly	The EPA Office of Water’s

sensitive areas	vulnerable to contaminants. These can include rivers, wetlands, habitats for endangered species, and the like	Storage and Retrieval (STORET) system provides a repository for water quality, biological, and physical data used by EPA, other government agencies, and the public. www.epa.gov/storet
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Health Indicators

Health indicators provide information on the general health of the community’s residents and their ability to cope with environmental stresses. Some environmental stresses may pose greater risks to populations with health sensitivities that result from age (e.g., children, the elderly), genetics, dietary deficiencies, health impairments, lifestyle choices (e.g., smoking), and cumulative exposure to substances during daily activities. By examining morbidity and mortality of subsets of the population, EPA may be able to detect the presence of environmental stresses. Specific types of data that could be considered health indicators include:

Indicators	Comments	Data Sources
Indicators of existing health conditions	Infant mortality rate defined as the number of deaths under the age of 1 per 1,000 live births. “In the context of environmental justice, above-average infant mortality in a community might reflect environmental hazards, including the possible cumulative effect of various environmental contaminants. However, this statistic is sensitive to a variety of community health factors that impact pregnant women and newborn infants, including nutrition, drug and alcohol use, and disease status.	The Center for Disease Control’s National Center for Health Statistics – www.cdc.gov/nchs/fastats/default.htm National Vital Statistics System. Also look at state and County/Parish health department reports and/or data.
Low birth weight rate defined as the number of births < 2,500g per 100 live births	May be the result of environmental stress or a variety of community health factors affecting pregnant women (e.g., nutrition, drug and alcohol use, and disease status). Children who were of low birth weight tend to continue to have health	The Center for Disease Control’s National Center for Health Statistics – www.cdc.gov/nchs/fastats/default.htm National Vital Statistics System. Also look at state and County/Parish health department reports and/or data.

	problems throughout childhood and might be more sensitive and less resistant to environmental hazards than other children.	
Age-adjusted mortality rate defined as the number of deaths from all causes, except homicides/suicides, per 100,000 people	Higher death rates among adults due to illness that tend to have environmental components, such as asthma and bronchitis, cancer, and diseases due to pathogens, might indicate that the community is subject to higher levels of environmental contamination than other communities.	The Center for Disease Control’s National Center for Health Statistics – www.cdc.gov/nchs/fastats/default.htm National Vital Statistics System. Also look at state and County/Parish health department reports and/or data.
Life expectancy at birth	Life expectancy is a widely accepted and standard measure of health outcomes and is included here as a broad-based measure of human health.	The Center for Disease Control’s National Center for Health Statistics – www.cdc.gov/nchs/fastats/default.htm National Vital Statistics System. Also look at state and County/Parish health department reports and/or data.

Indicators of Health Impacts from Environmental Stressors

Certain health indicators may reflect whether a subset of the population has health sensitivities (e.g., show adverse effects to toxic substances at lower doses) or might be more highly exposed (e.g., have cumulative exposure from multiple sources or pathways, food consumption patterns, or cultural or behavioral patterns).

Morbidity information can be used to assess the likelihood that residents have been exposed to environmental contaminants or pathogens. But this information also has to be considered within the context of factors such as occupational exposures, smoking, or poor diet.

Certain health indicators may reflect whether a subset of the population has health sensitivities or might be highly exposed, including:

Indicators	Comments	Data Sources
Number of illnesses attributable to chemical contaminants	Some types of diseases or health conditions can be caused by exposure to abiotic contaminants in the environment. Comparison of the incidence of particular types	Statistics on the incidence of cancer at the national, state, and county levels is available at the National Cancer Institute (at the National Institutes of Health) website www.cancer.gov/statistics/finding .

	of disease or health conditions in a community of concern with the incidence of those conditions in other communities (or with national averages) can provide an indication of whether the community of concern is actually experiencing a disproportionate share of those adverse health effects. If a community appears to be experiencing a higher than expected incidence of diseases that might be caused by chemical contaminants, examination of other indicators is warranted.*	Reports on specific states and counties can be accessed at http://statecancerprofiles.cancer.gov
Number of diseases attributable to pathogens	The adverse health effects of many water-borne pathogens often are manifest within hours of exposure, making it easier to identify the sources of pathogens. Communities experiencing higher rates of pathogen-caused diseases indicate the existence of problems that need to be addressed quickly.	State and local health departments.

*Note: Statistical comparisons, by themselves, do not constitute evidence of causation.

Furthermore, the size of a community of concern often is too small to demonstrate statistically significant increases in the incidence of a disease compared with other communities. Diseases with long latency periods, such as cancer, might be indicative of exposures that occurred decades earlier. Thus, it usually is not possible to conclusively demonstrate the existence or cause of increased incidences of diseases related to exposure to such contaminants.

Social Indicators

Social indicators reveal trends about the general socio-demographic aspects of the community. As part of the assessment methodology, EPA would collect general demographics information, such as race, ethnicity, etc. However, there are a number of additional Social Indicators that while difficult to measure, are nonetheless useful in helping to characterize the community. These include access to amenities, government response actions, community participation, and potential for public participation. All of these data can be found at the community level at the U.S. Census Bureau’s American Community Survey.

Note: In addition to reviewing data from the Census Bureau and other organizations (including universities, business groups, economic development organizations), Rose Hill Communications consultants also like to conduct interviews of local officials, county and municipal staff, school district staff, social service organization staff, informal opinion leaders, and the like to understand how these factors actually play out in the community. For additional insights into gathering and “ground-truthing” information on communities, see “Environmental Community Relations: What Can You Learn About a Community from Reviews of Publicly Available Documents,” “Demystifying Public Environmental Concerns: Implementing Community Assessments,” and “Variability of Community Attitudes and Behaviors Relevant to Environmental Issues,” by Carol J. Forrest, which are downloadable below, or on the rosehillcommunications.com “Publications” page.

Indicators	Comments	Data Sources
Percent of population that is of various ethnic and national origins or other factors, such as age	This includes basic demographic information.	This information is available at the community level at www.census.gov/acs/www/ Additional qualitative information on how residents having these characteristic are involved within the community, including methods for reach out to them, who the formal and informal leaders might be, and the like can be gathered through interviews of local officials, social services organizations, public school district personnel, religious organization personnel, etc.
Population density, including distribution of urban and rural populations	Population density affects both risks of adverse health effects and the ability of a local community to influence decisions that affect their environment. For example, while locating a hazardous waste treatment facility in an urban area may, in theory, put more people at risk, locating such a facility in a rural environment may make result in less public involvement in decision making, since a smaller population may be less effective in mounting objections regarding the facility.	This information is available at the community level at www.census.gov/acs/www/ Additional qualitative information on both urban and rural communities can be gathered through interviews of local officials, social services organizations, public school district personnel, religious organization personnel, etc.
Percent of population that is Native American	There are several Executive Orders that require federal departments/agencies to address	This information is available at the community level at www.census.gov/acs/www/

	possible impacts to tribal communities separately. These orders provide an opportunity for the tribal governments to interact with federal departments/agencies in a “government-to-government” manner.	Additional qualitative information on working with tribal governments can be gathered by speaking with tribal government representatives and local advocacy group personnel who may provide services to tribal communities.
Distribution of languages spoken in population	This factor is particularly important in determining how best to address public participation issues.	This information is available at the community level at www.census.gov/acs/www/ . Additional qualitative information on non-English speakers can be gathered through interviews of local officials, social services organizations, public school district personnel, religious organization personnel, etc.
Percentage of the population that is literate in English or other languages	The level of literacy for the adult population provides a critical measure of the likelihood and ability of the community to know about and participate in public meetings, to comment on written proposals, and to otherwise participate in the process. If tools used to encourage public participation are not tailored to local literacy rates, the outreach process can be ineffectual.	Information on educational achievement and primary languages spoken is available at www.census.gov/acs/www/ . Additional qualitative information, including methods for reach out to residents who might have literacy issues can be gathered through interviews of local officials, social services organizations, public school district personnel, religious organization personnel, etc. In communities having significant numbers of non-English speakers or non-English literate residents, persons performing assessments should attempt to identify advocacy groups that specialize in assisting recent immigrants from specific countries or of specific ethnicities.

Indicators of Potential Vulnerability to Stress

Certain subpopulations in communities may be more vulnerable to exposure because of less access to certain amenities (e.g., hospitals, safe drinking water, sewage treatment, public transportation) and because of certain behaviors. Examples include:

Indicators	Comments	Data Sources
Percent of community with access to public transportation and services	Particularly in the case of low-income groups, lack of access to public transportation can make it problematic to visit the doctor, buy fresh produce, or participate in public meetings. Sources of information – State and local departments of transportation may provide information on mass transit routes.	The Census Bureau’s American Community Survey www.census.gov/acs/www/ provides information on the accessibility of public transportation (and other transportation methods used to travel to work) at the community level. The U.S. Department of Transportation also has information available at www.dot.gov
Percent of community with access to health care facilities	Not all groups or communities have equal access to health care facilities or to health care. Groups with limited access to health care include persons without insurance, including low-income families, the homeless, migrant farm workers) and those, such as the elderly, who may be unable to travel to health care facilities.	State and Local departments of health. In addition, the Center for Disease Control’s National Center for Health Statistics provides reports on percentages of population at the state level that has health insurance: www.cdc.gov/nchs/data/nhis/earlyrelease/insur201106.htm
Percent of community that uses regulated (cigarettes, alcohol) and unregulated (street drugs) substances	These substances can dramatically impair the overall health of individuals who use them.	State and local health officials may have this information. The CDC’s National Center for Health Statistics, www.cdc.gov/nchs/fastats/default.htm has data on the use of drugs, alcohol, and tobacco on the national level.
Percent of community with access to alternative sources of drinking water	Access to safe drinking water is essential to the standard of living that is expected by the public in this country. Assuming that situation as the baseline, one indicator of vulnerability for a community would be access to an alternative water supply should contamination affect their	Information on drinking water quality, by water system, showing water quality violations by local water providers, is available through EPA’s Safe Drinking Water Information System, www.epa.gov/enviro/facts/sdwis/index.html Information on local water supply quality is also available through local and state health departments, state geological surveys,

	primary water supply. Several factors affect access to alternative sources of safe water, including the financial resources to access them (e.g., to build new pipelines, to temporarily use bottled water).	and state environmental agencies.
Percent of community with sewage treatment	Communities without adequate sewage treatment have an increased potential to experience water-borne diseases.	The U.S. Census Bureau’s American Community Survey provides data on the percentage of homes with indoor plumbing at the national, state, county, and local level. Information on unsafe septic fields and problems with sewers can be gathered by speaking with local or county public works and health department personnel.
Percent of community that relies on local food sources	Some ethnic groups are more likely to grow their own food crops or to rely upon subsistence fishing from local surface waters. Such groups would be more likely to be exposed to contaminants that accumulate in soils, plants, and fish than other groups which purchase their foods at commercial stores. Sport fishers who consume their catch also can be more likely to experience such exposures.	Information may be available on the county (and local) level through agricultural extension services personnel and local social services organizations. Information on consumption of fish from local surface waters may require research into agencies that monitor fishing, provide boat licenses, or manage local lakes or local stretches of water ways. National Listing of Fish and Wildlife Advisories www.epa.gov/ost/fish nationally and by state.

Indicators of Government Response Actions

Note: This section of the Toolkit depends on access to details about government budgets that may not be readily accessible to private-sector professionals. In addition, although these are “hard” data, they provide limited insight into the effectiveness of government public involvement efforts. Rose Hill Communications’ consultants believe that although obtaining this information may provide some useful information, it is more important to understand local social and political dynamics, whether they constitute barriers to meaningful public involvement (or even to the communication of information to potentially affected or interested stakeholders), and how any barriers that do exist can be surmounted through the design of an effective public involvement program.

For more information on assessing community social and political dynamics and identifying effective channels of communication, see “Environmental Community Relations: What Can You Learn About a Community from Reviews of Publicly Available Documents,” “Demystifying Public Environmental Concerns: Implementing Community Assessments,” and “Variability of Community Attitudes and Behaviors Relevant to Environmental Issues,” by Carol J. Forrest, which are downloadable below, or on the www.rosehillcommunications.com “Publications” page.

Certain data regarding government actions can provide information about the level of commitment the local or state government has for encouraging meaningful public involvement in the decision-making process. Examples included in the Toolkit are as follows:

Indicators	Comments	Data Sources
Expenditure/investment on providing access to environmental information (as a percent of total community budget)	These data can provide an indication of the commitment of the government to ensuring that the public obtains sufficient information to allow them to get involved in the decision-making process.	If available, such data may have some value.
Expenditure/investment on environmental education and training (as a percent of the total community budget)	These data could be used to evaluate the efforts to educate and train the community on relevant technical and policy issues.	If available, such data may have some value.
Number and frequency of public meetings on proposed actions and policy decisions	The frequency of meetings can indicate whether the decision-makers are involving the public in all appropriate stages of the decision-making process.	Should be available through Agency in question.
Number of different types of materials distributed	An assessment of how environmental information is distributed in the community would indicate whether residents are likely to be getting sufficient information. An example of such information distribution could be to make meeting notices available via Internet and local newspapers, church, and community organizations.	Should be available through Agency in question. The effectiveness of these materials (in terms of whether stakeholders remember them), can be gathered by interviewing local stakeholders and by reviewing local newspapers and municipal and/or community newsletters via the internet or in “hard” copy.
Percent of households that receive distributed materials	Since public participation is directly linked to the level of awareness on any environmental issue, the percent of households that receive distributed materials can be a direct measure of the potential to participate in the	Should be available from Agency in question.

	decision-making process.	
Number of documents available in the various languages associated with a community	If the initial community demographic assessment determines that such translations are needed, an assessment of the process and frequency of translating notices and fact sheets into languages other than English would indicate whether residents are likely to be getting sufficient information.	Should be available through Agency in question.

Indicators of Community Participation

Some social indicators can measure the ability of the population to gain access to information or to meaningfully participate in the decision-making process. Examples include:

Indicators	Comments	Data Sources
Community identification	The boundaries of a community of concern may be based on any number of factors that don’t always conform to political designations. A community of concern could be a community board district, sanitation district, school district, hospital district, zip code, and the like. Community members also often self-define their community based on proximity to a physical feature, such as a subway station or an element of similarity, such as a cluster of persons with the same ethnic heritage. It is important to assess the various community definitions with the potentially impacted area.	Qualitative data that can be identified by interviewing local stakeholders.
Cultural dynamics	Understanding the cultural dynamics of a community helps one design an appropriate public process to all their participation in the decisions that will affect them.	Qualitative data that can be identified by interviewing local stakeholders.
Quality of public participation of community residents	A qualitative assessment of public participation efforts would indicate whether members of	Qualitative data that can be identified by interviewing local stakeholders.

	communities have meaningful opportunities to participate directly in decisions and actions that affect their community.	
Number of community residents participating in non-governmental organizations (NGOs)	Measures of the level of involvement of community members in civic organizations can indicate the community’s desire and ability to involve themselves in matters affecting the community. While a lack of participation of community members in these organizations might indicate that there are a few issues requiring civic attention, it also might indicate that community members do not believe that they can affect the conditions of their community.	Qualitative data that can be identified by interviewing local stakeholders.
Number of community members participating in the decision-making process	The more involved that community members are in the environmental decision-making process, generally speaking, the greater the level of environmental protection achieved.	Qualitative data that can be identified by interviewing local stakeholders.

Economic Indicators

Economic indicators reveal trends about the community’s socio-economic well-being. Assessing income levels is crucial to an environmental justice assessment, because one of the goals of environmental justice is to protect low-income populations against adverse, disproportionate environmental and health impacts. Examples of economic indicators that provide data about economic well-being include:

Indicators	Comments	Data Sources
Unemployment rate	This statistic is a measure of the economic opportunities in a community and the degree to which a particular community is able to meet their basic needs. In the absence of income data, this indicator provides a measure of community members’ financial independence.	The National Bureau of Labor Statistics has state and some local statistics under “Subject Areas” and “Databases & Tools” at www.bls.gov/ County and municipality offices and local economic development agencies often have this data as well as insights into what drives the data on the local level.
Income levels and	This statistic measures the overall	The U.S. Census Bureau provides

<p>distribution</p>	<p>income levels of the community and the proportion of the total households that are in different income categories.</p>	<p>this type of information at the community level www.census.gov/acs/www/ Information on income distribution (and its consequences) is also often available through county and municipal offices and social services agencies.</p>
<p>Percent of homeowners in a community or the percent of renters in a community</p>	<p>In an environmental justice context, the percentage of owner-occupied units versus renter-occupied could, in some cases, have an impact on the community’s interest, willingness, and availability to participate in environmental decisions affecting the community.</p>	<p>This information is available through the U.S. Census Bureau www.census.gov/acs/www/ Information on homeownership is also often available through county and municipal offices and social services agencies.</p>
<p>Percent of community residents with a reliance on polluting industries for jobs and economic development</p>	<p>The degree to which a community is economically dependent on potentially environmentally detrimental facilities should be assessed. Communities with greater dependence may be more willing to assume higher risks and to tolerate some health impacts because the community members feel they have no alternative. This situation can help to create allegations of environmental injustice, because the community members are unlikely to speak out or raise concerns against their primary source of income.</p>	<p>Obtaining this information typically requires an understanding of the economy of an area. County and municipal officials and staff, economic development corporation staff, and chamber of commerce staff can often provide information on employment in certain industries, and, in turn, the impact these industries have on the overall local economy.</p>
<p>Percent of community residents with employment in pollution-generating industrial facilities or services</p>	<p>These statistics could provide one indication of the degree to which the local community benefits economically from such facilities. The number of residents employed and the types of jobs an income levels they obtain are important measures of economic benefit.</p>	<p>General information on job classifications can be found in the Census data, www.census.gov/acs/www/ County and municipal offices, local economic development corporations, and chambers of commerce can often provide this information.</p>

<p>Number of brownfields in the community</p>	<p>The number of active brownfields sites in a community is indicative of: 1. The economic, environmental, and community concerns surrounding brownfields redevelopment initiatives; and 2. The issues of economics and equality in revitalizing urban communities. The goals of brownfields initiatives in redeveloping the land, remediating contaminated properties, promoting economic development, and, ultimately, expanding the tax base, address some of the main concerns of community residents, e.g., a cleaner, healthier environment, economic development and jobs, and, finally, an opportunity to rebuild a crumbling infrastructure with meaningful involvement of the residents in the decision-making process.</p>	<p>Landview 6, which is available through the Right-to-Know Network (www.rtknet.org) allows users to determine brownfield locations relative to the affected community.</p> <p>County and municipal offices and local economic development corporations also often have information on brownfields in the community.</p>
<p>Reliance on natural resources for the community’s economic base (as a percent of total community budget)</p>	<p>If a community’s economic base relies primarily on its natural resources, an environmental release of hazardous materials that impacts those natural resources, such as a major oil spill, can have a devastating adverse impact, not only on wildlife and ecosystems, but also on the community that relies on those natural resources to survive and prosper.</p>	<p>Various databases may provide information on populations within specified distances of open space, natural land, wetlands, and the like, including:</p> <p>The U.S. Forest Services’ Natural Resource Manager, www.fs.fed.us/nrm/index.shtml</p> <p>The USDA’s Natural Resource Conservation Service, www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/nri</p>