## EPA scientists develop tools to help communities identify and prioritize environmental health issues

### Issue:

Community groups want to understand their exposures and risks to environmental pollutants. They also want to know how to effectively reduce exposures to pollutants with the highest risks. If relevant science-based tools are not readily available, decisions may be based solely on the perception of exposures and risk. EPA scientists are developing tools to improve community access to scientific information.

Community involvement is crucial in defining and prioritizing environmental health issues for specific areas or groups of people. Community groups and members can supply local knowledge and interpret results in the context of local decision-making. Because of this, communities are playing an increasingly central role in defining environmental problems and identifying the information needed to address these problems. Involvement of communities is equally important where evidence indicates disproportionate exposures or risks are caused by localized contaminants or other environmental conditions.

To support communities with this process, user-friendly tools are needed that provide environmental exposure and health-related information. To ensure these tools are scientifically sound, research is necessary to advance the science to take into account the many factors that may impact human exposure and health risks within a community — including chemical and non-chemical factors.

### Science Objective:

EPA is developing the Community-Focused Exposure and Risk Screening Tool (C-FERST) — a web-based community mapping, information access, and assessment tool to inform environmental public health decisions. It is designed to help communities find out more about issues they've already identified, identify new issues, and prioritize these issues to promote health and well-being in their communities. C-FERST supports EPA's priorities for cleaning up communities and working for environmental justice to protect vulnerable groups of people.

C-FERST provides a framework for collaborative research and information sharing to understand community-based exposures and risks. It is anticipated that the tool and science that populates it will empower environmental managers and community residents to make decisions about environmental issues specific to their location that result in better-informed decisions.

### Application and Impact:

C-FERST will link to and build upon other community-focused tools to help identify human exposures within a community and help prioritize issues for taking action to improve public health. EPA scientists are partnering with Agency community programs, American Indian tribal groups, and other community programs and agencies to design and refine C-FERST through collaborative pilot projects and beta testing. During C-FERST's development, EPA scientists have listened to community residents and local officials to test and refine the tool.

C-FERST is included in EPA activities for the White House Open Government initiative, under Science-Based decision support tools. The National Prevention Council (composed of the heads of 17 federal agencies and chaired by the Surgeon General) Action Plan highlighted C-FERST as an

EPA Exemplar Story under the Empowered People Strategic Direction Plan.

In fiscal year 2013 C-FERST will undergo peer review before full public release. Future users could include community members and leaders, as well as federal, state, or local agencies working with community partners. Eventually, C-FERST users will be able to view maps and community reports for environmental issues such as air toxics, diesel exhaust, lead, water pollution, and fish consumption. Users will also be able to view cumulative risk estimates for lung cancer, asthma, and early neurotoxicity effects.

As the tool is refined and populated with available information, users will be able to:

### Follow walk-through guidance and strategies for conducting community assessments, including:
- EPA's CARE (epa.gov/care) 10-Step Roadmap
- NACCHO's Protocol for Assessing Excellence in Environmental Health
- A new Health Impact Assessment roadmap

### Consider/identify environmental issues by:
- Viewing guidance, and learning about issues other communities have considered
- Accessing information about environment, health, and socioeconomic issues
- Accessing methods for local monitoring

### Access fact sheets for environmental issues of concern including:
- EPA fact sheets and community projects focusing on selected issues

### Visualize exposure/risk via mapping tools that allow users to:
- Map environmental concentrations, human exposures, and health risks
- Overlay pollutant sources
- Overlay demographic data for identifying vulnerable populations
- Overlay (but not necessarily share) local data onto EPA data sets
- View potential impact of solutions

### Generate environmental issue profiles with the help of:
- Fact sheets, web-links, local exposure estimates, maps, and community solutions available in a consistent report format for each selected issue

### Prioritize your community's issues by:
- Viewing community data table
- Accessing examples of risk ranking approaches

### Explore potential solutions including:
- Links to fact sheets on exposure/risk reduction actions and best practices
- Information on promising practices for sustainable community solutions

### Link to other community-relevant tools including:
- A searchable compendium of community-relevant tools and Web links to other tools.

### References:
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V.G. Zartarian, B.D. Schultz (2010). The EPA's human exposure research program for assessing cumulative risk in communities. *Journal of Exposure Science and Environmental Epidemiology*. 20, 351-358.

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