

## Community-Focused Exposure and Risk Screening Tool (C-FERST): Supporting sustainable & healthy communities

### Issue

Community groups want to understand their exposures and potential risks from 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. In addition, communities are faced with cumulative exposures and potential risks from chemical and non-chemical stressors, which are scientifically challenging to evaluate and assess.

Community involvement is crucial in defining and prioritizing environmental health issues for specific areas or groups of people. Community members and groups are able to gather local information, and use this information to make their communities healthier. 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.

### What is C-FERST?

EPA is developing the Community-Focused Exposure and Risk Screening Tool ([C-FERST](#)) — an online information access and community mapping tool that communities can use to learn more about environmental, health and socioeconomic issues in their community. The tool includes information about

promising sustainable community solutions, structured community guides, local maps and reports, fact sheets, best practices, and links to other public health decision-making tools. With C-FERST, users can view maps and community reports for a variety of environmental issues such as air toxics, diesel exhaust, lead, water pollution, and beach advisories.

C-FERST links to and builds upon other community-focused tools to help identify human exposures and potential risks within a community. The tool helps communities prioritize which issues to assess and take action on to improve public health. C-FERST also provides a framework for collaborative research and information sharing to understand community-based exposures and risks.

C-FERST is intended to serve the needs of a broad range of users including the general public, environmental professionals, state and local risk assessors, EPA community involvement coordinators and environmental justice coordinators working on local-scale issues. Community groups or members of the public and these professionals may benefit from working together to identify and evaluate issues and interpret data and results in C-FERST.

### C-FERST development, beta-testing & scientific peer-review

EPA scientists have partnered with a variety of community groups in designing, piloting and testing C-FERST, including a number of communities participating in [EPA's Community Action for a Renewed Environment \(CARE\)](#) grant program. During testing and refinement of C-FERST, EPA scientists solicited feedback from community residents and local officials to improve the tool. C-FERST was scientifically peer reviewed in 2014 and full public release is planned for early 2016.

C-FERST supports EPA's priorities for cleaning up communities and advancing sustainable development; and working to make a visible difference in communities. The tool will be continually refined and populated with improved and updated information. A number of training resources are included within C-FERST to help users become familiar with the tool, including a "Quick-start" guide, a map user guide, and "use case examples" for each of the major components of C-FERST. With C-FERST, users can:

### **View maps of their community's environment**

C-FERST maps contain information on pollution sources, estimated concentrations, exposures and risks from pollution, demographics, and other key community characteristics.

### **Compare local, county, state & national estimates**

C-FERST's "Community Data Table" provides a summary of environmental conditions for a community, including estimated concentrations, exposures and risks for select pollutants, as well as demographic information. Comparing this with information for other geographic areas, can help community groups identify environmental conditions they may want to examine.

### **Gather information about their environment**

C-FERST's "Environmental Issue Profiles" contain links & data from various EPA and non-EPA sources for issues and concerns commonly identified by communities. The Environmental Measurement Methods section in C-FERST provides links to key EPA resources related to citizen science air monitoring, and other available measurement methods.

### **Explore potential solutions & community projects**

C-FERST contains links for exposure & risk reduction options and for projects other communities have conducted. These can be used to explore potential solutions to environmental issues and to see what has worked in other communities.

### **Follow walk-through guides for conducting community assessments:**

Community guides in C-FERST can provide information to help community groups systematically conduct an environmental health assessment in their locality. Guides in C-FERST include: EPA's Community Action for a Renewed Environment (CARE) Roadmap; and the National Association of City and County Health Officials Protocol for Assessing Excellence in Environmental Health.

### **References:**

V.G. Zartarian, B.D. Schultz, T.M. Barzyk, M. Smuts, D.M. Hammond, M. Medina-Vera, A.M. Geller (2011). "The EPA's Community-Focused Exposure and Risk Screening Tool (C-FERST) and Its Potential Use for Environmental Justice Efforts." *American Journal of Public Health*. 101 (S1): S286-S294.

V.G. Zartarian, B.D. Schultz (2011). The EPA's human exposure research program for assessing cumulative risk in communities. *Journal of Exposure Science and Environmental Epidemiology*. 20, 351-358.

### **Contact:**

Jim Quackenboss  
EPA National Exposure Research Laboratory  
[quackenboss.james@epa.gov](mailto:quackenboss.james@epa.gov)

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