United States Environmental Protection Agency

Community-Focused Exposure and Risk Screening Tool (C-FERST)

Quick Start Guide

Office of Research and Development
National Exposure Research Laboratory

C-FERST
Quick Start Guide

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Introduction to C-FERST

The Community-Focused Exposure and Risk Screening Tool (C-FERST) is an online information access and mapping tool that communities can use to learn more about their environmental issues and exposures. The tool includes local maps, reports, fact sheets, and links to other public health tools. C-FERST also offers reports from community projects that address local issues and structured community guides that can help communities assess local environmental conditions. C-FERST is intended to provide screening-level information to help users learn about community environmental and public health issues; however, it does not quantify risk values, and is not intended to be the sole basis for any public health decision.

C-FERST is intended to serve the needs of a broad range of users, including the general public, environmental and public health professionals, state and local risk assessors, EPA community involvement coordinators and environmental justice coordinators working on local-scale issues, and academic institutions serving local communities. It may be mutually beneficial for community members and groups to work with regional, state or local environmental experts, and local academic institutions to identify and learn about issues, and interpret C-FERST data and results. C-FERST is available to anyone with a computer and an internet connection. No special software is needed, however the tool runs most effectively with a high-speed internet connection.

This Quick Start guide describes the main components of C-FERST. Each section describes how to navigate to a component of C-FERST from the C-FERST Home Page and then describes its basic features.

C-FERST Home page

The Home page in C-FERST has several main options:

- **View** maps of your community's environment

    Provides examples of how to use C-FERST Maps to view your community's environment, followed by a link to the mapping tool.

- **Compare** local, county, and state estimates

    Provides examples of how to use C-FERST Community Data Table to compare local estimates to county and state; includes a link to the Community Data Table.

- **Explore** information about your environment

    Provides examples of how to use C-FERST Environmental Issue Profiles to learn information about your environment and how to find Exposure and Risk Reduction options projects.

- **Plan Your Project** with community guides

    Contains information on how C-FERST can be used in conjunction with community assessment guides, including EPA's Community Action for a Renewed Environment (CARE) Roadmap, and the National Association of City and County Health Officials (NACCHO) Protocol for Assessing Community Excellence in Environmental Health (PACE-EH) Guidebook.

- **C-FERST Users**

    Contains information about C-FERST like answers to common questions and how to participate in the C-FERST User Forum.

- **Resources**

    Contains information beyond C-FERST regarding additional tools, citizen science, and environmental measurement methods.

There are also boxes on the side of the web page with links to:

- Questions and Answers
- C-FERST Disclaimer and Limitations
- Related EPA tools
- EPA Tools Under Development

If at any time you need assistance, a "Contact Us" link is available at the bottom of the page. Use this link to ask questions, provide feedback, or report a problem.

View Maps of Your Community's Environment
How to Access the Maps from the C-FERST Home page

1) Go to **View Maps of your Community's Environment.** This page contains a description and examples, followed by a button to Get Started: **"View Community Maps"**

2) Returning users can click the **Maps** link under **View**

Basic Features of C-FERST Maps

You are here:
EPA Home » C-FERST » C-FERST Maps of Community Environmental Conditions

C-FERST Maps of Community Environmental Conditions

Browser Requirements

Use the Map Viewer below to explore maps that identify sources of pollution in your community and the surrounding area. These maps do not contain every map layer that may be important to a community; you may want to check with state or local agencies for data that could be added to the maps for a more complete picture of your community's conditions. **Please view the C-FERST Maps Questions and Answers and User Guide prior to using C-FERST Maps.**

More Information

- C-FERST Maps Questions and Answers
- Maps User Guide
- Description of C-FERST Map Layers
- Example uses of C-FERST Maps

View Map in Full Screen

The Modify Map button opens a menu for adding data to the map.

The plus and minus buttons allow you to zoom in or out.

The search box is where you enter your location.

The Details button shows or hides the contents pane on the left side of the map, including the three buttons below it:
- Information about the map
- Map contents
- Map Legend

The Basemap button opens a gallery of different basemaps you can view.

The Bookmarks button allow you save locations (for your current session) so you can easily zoom back to those locations.

Refer to the C-FERST Maps User Guide for more detailed description of these features and how to use them.

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Community Data Table

How to Access the Community Data Table from the C-FERST Home page

1) Go to **Use C-FERST to Compare Your Community with County and State Estimates.** This page contains a description and an example with a button to **"Get Started: Create the Community Data Table."**

2) Returning users can click the **Community Data Table** link under **Compare Your Community** on the home page.

Basic Features of the Community Data Table

Once you have reached the Community Data Table page, you can search for and select your location to generate a table like the one below. For a more detailed description of this process, see the C-FERST Community Data Table Quick Start Guide.

You are here: EPA Home » C-FERST » Community Data Table

Community Data Table

The map shows the census tract for the area you have selected.

The default indicators in the table are based on EPA-related issues, stakeholder feedback, and available data.
There may be other important issues that are not currently included in this table.

Indicators and Indices	Tract 523800	Wayne County	Michigan	Data Info/Notes
► Environmental Concentration Estimates				
► Human Exposure Estimates				
▼ Health Risk Estimates				
Cumulative Air Toxics Cancer Risk[1] (risk per one million persons)	54.4	37.6	31.3	2011 NATA
Outdoor Air - Acetaldehyde Cancer Risk[1] (risk per one million persons)			3.3	
Outdoor Air - Arsenic Cancer Risk[1] (risk per one million persons)			0.2	2011 NATA
Outdoor Air - Benzene Cancer Risk[1] (risk per one million persons)	6.0	6.3	5.3	2011 NATA
Outdoor Air - Butadiene Cancer Risk[1] (risk per one million persons)	1.86	2.06	1.58	
Outdoor Air - (risk per one million persons)		0.5	0.3	
Outdoor Air - Formaldehyde Cancer Risk[1] (risk per one million persons)	15.9	15.7	14.3	2011 NATA
Outdoor Air - Naphthalene Cancer Risk[1] (risk per one million persons)	1.3	1.6	1.2	2011 NATA
Outdoor Air - PAH Cancer Risk (risk per one million persons)	0.5	0.3	0.2	
Cumulative (risk per one million persons)	1.53	1.76	1.34	2011 NATA
Outdoor Air - Acetaldehyde Non-Cancer Respiratory Risk (Hazard Quotient[2])	0.2	0.2	0.2	2011 NATA
Outdoor Air - Acrolein Non-Cancer Respiratory Risk+ (Hazard Quotient[2])	1.0	1.3	1.0	2011 NATA
Outdoor Air - Chromium Non-Cancer Respiratory Risk (Hazard Quotient[2])	0.0005	0.0004	0.0003	2011 NATA
Outdoor Air - Diesel PM Non-Cancer Respiratory Risk (Hazard Quotient[2])	NaN	NaN	NaN	2011 NATA
Outdoor Air - Formaldehyde Non-Cancer Respiratory Risk (Hazard Quotient[2])	0.1	0.1	0.1	2011 NATA
Outdoor Air - Naphthalene Non-Cancer Respiratory Risk (Hazard Quotient[2])			0.012	2011 NATA
Cumulative Air Toxics Non-Cancer				2011 NATA
Outdoor Air - Lead Non-Cancer Neurological Risk (Hazard Quotient[2])	0.002	0.002	0.002	2011 NATA
► Demographic, Social and Economic Indicators				

Columns contain estimates for the census tract you selected, as well as county and state estimates.

The last column contains a link to the data source, where you can find more information about the data.

There are several sections of the table, which can be expanded or collapsed by clicking on the section heading or the small arrow beside it.

Each row is an environmental or demographic indicator. The hyperlinked ones lead to an Issue Profile on the same indicator.

NATA Limitations
NATA Frequent Questions

[1] How does EPA estimate cancer risk? See NATA 2011 for more details.
[2] Hazard Quotient is the ratio of the potential exposure to the substance and the level at which no adverse effects are expected. Please see NATA: Glossary of Terms for more information.

Curious about the data source? Find out more by clicking on the links to the Limitations, Frequent Questions, Glossary, and NATA 2011.

Environmental Issue Profiles

How to Access the Environmental Issue Profiles from the C-FERST Home page

1) Go to **Use C-FERST to Explore and Learn about Environmental Issues.** This page contains a description and examples, followed by a button to **"Get Started: Explore Issue Profiles"**

2) Returning users can click the **Environmental Issues** link under **Explore and Learn** on the home page

Basic Features of an Environmental Issue Profile

Once you have reached the Environmental Issue Profiles page, you can select an issue and view an Issue Profile:

Click this link for a description of information found in each section of an Issue Profile.

Select different tabs or lists of issue profiles to see them.

Sections of the Environmental Issue Profile Include:
- General Information
- Sources
- Environmental Concentrations, Human Exposures, and Health Risks*
- Exposure and Risk Reduction Options
- Strategies Implemented by Other Communities

including data in maps and pie charts in pop-ups when available for hazardous outdoor air pollutants.

You are here: EPA Home » C-FERST » C-FERST Issue Profile: 1,3 Butadiene

C–FERST Issue Profile: 1,3 Butadiene

Motor vehicle exhaust is a source of 1,3-butadiene. Although 1,3-butadiene breaks down quickly in the atmosphere, it is usually found in ambient air at low levels in urban and suburban areas. Short-term human exposure to 1,3-butadiene via inhalation can cause irritation of the eyes, nasal passages, throat, and lungs. Epidemiological studies have reported a possible association between 1,3-butadiene exposure and cardiovascular diseases. Epidemiological studies of workers in rubber plants have shown an association between 1,3-butadiene exposure and increased incidence of leukemia. Animal studies have reported tumors at various sites from 1,3-butadiene exposure. EPA has classified 1,3-butadiene as carcinogenic to humans by inhalation.

Learn more about 1, 3-butadiene by exploring the links provided below.

General Information
- Agency for Toxic Substances & Disease Registry's Toxic Substances Portal: 1,3 Butadiene [Exit]
- EPA Hazardous Air Pollutants

Sources
- Search TRIExplorer for Reports on Butadiene Releases from Stationary Sources

Environmental Concentrations, Human Exposures, and Health Risks

Interested in learning more about a specific location? Type an address, city, or ZIP code into the box on the right side of the map below. Click on the map to see a pop-up with information about ambient concentration, exposure concentration and cancer risk for the chosen location(s). Navigate to the next feature by clicking the small arrow(s) on the top right side of the pop-up.

- Integrated Risk Information System (IRIS): 1,3-Butadiene Summary
- Health Effects Notebook for Hazardous Air Pollutants: Butadiene
- National Toxicology Program's 13th Report on Carcinogens Substance Profile: 1,3-Butadiene (PDF) (3pp, 205KB, About PDF) [Exit]
- Acute Exposure Guideline Levels (AEGLs) for 1,3-Butadiene
- CalEPA Office of Environmental Health Hazard Assessment's 1,3-Butadiene Reference Exposure Levels (PDF) (102pp, 1.36 MB, About PDF) [Exit]

Exposure and Risk Reduction Options
- Agency for Toxic Substances & Disease Registry's ToxFAQs: How can families reduce risk of exposure to 1,3-Butadiene? [Exit]

Strategies Implemented By Other Communities
- New York: Center of Environmental Information
- Community-Based Air Toxics Projects Addressing Butadiene

Contact Us to ask a question, provide feedback, or report a problem.

Plan Your Project

How to Access Community Guides from the C-FERST Home page

Click the **Community Guides** link on the Home page or click one of the guides.

Basic Features of the Community Guides

Using the CARE Roadmap as an example:

The screenshot shows the C-FERST web page titled "Use C-FERST with EPA's Community Action for a Renewed Environment Roadmap" with annotations:

General information about the CARE Roadmap

Click on the steps to see how C-FERST features and resources can help with these steps.

C-FERST User Forum

How to Access the User Forum from the C-FERST Home page

1) Click the **C-FERST User Forum** link on the Home page

2) Click **C-FERST User Forum** inside the green box on the right called **Ready to join the Conversation?**

Basic Features of the C-FERST User Forum
Once you have reached the User Forum page, you can explore existing topics or create a new topic

Click the title of the topic you would like to read or to post a response.

Create a new topic by entering your name, email, topic title, and description.

Prove you are a human by typing the text. Click submit.

Resources

How to Access Environmental Measurements from the C-FERST Home page

Click the **Environmental Measurement Methods** link on the Home page under Resources

Plan Your Project

- Community Guides
  - CARE Roadmap
  - PACE-EH Guidebook

C-FERST Users

- About C-FERST
- C-FERST User Forum

Resources

- Additional Tools
- Citizen Science
- Environmental Measurement Methods

Related EPA Tools

- EnviroAtlas
- Environmental Justice Screening and Mapping Tool

Under Development:

- Community-LINE Source Model (C-LINE)
- Tribal-Focused Environmental Risk and Sustainability Tool

Basic Features of Environmental Measurement Methods in C-FERST

C-FERST

Contact Us   Share

You are here: EPA Home » C-FERST » Environmental Measurement Methods in C-FERST

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Environmental Measurement Methods in C-FERST

Environmental Measurement Methods

Below are several types of methods for measuring the level of pollutants in different environments. These methods are organized from more basic, commercially available techniques to more advanced, technical methods. These are not the only measurement methods available to communities. The most appropriate method will depend on the issue of concern, community objectives, and the quality of the data needed to meet those objectives. Inclusion of these tools in C-FERST does not imply endorsement of their use.

The tests are broken into different levels of analysis & different mediums (Air/Water/Soil).

More Information

- How were these Environmental Measurement Methods Chosen?
- EPA Environmental Measurements
- Additional Tools for Communities

Commercially Available "Do-It-Yourself" Test Kits

- Screening Level Methods for Air
- Screening Level Methods for Surfaces
- Screening Level Methods for Water

Commercially Available Kits that Require Laboratory Analysis

- Quantitative Screening Methods for Air
- Quantitative Screening Methods for Surfaces
- Quantitative Screening Methods for Water

Refined Quantitative Methods for Technical Users

- EPA and Other Federal Methods for Air
- EPA and Other Federal Methods for Soil
- EPA and Other Federal Methods for Water

View a PDF Version of the information contained in tables.