Introducing Students to the Toxics Release Inventory

It's your **Right to Know** about the **Toxic Chemicals** in your community

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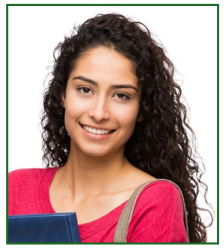
Student Questions

*What are the **top chemicals released** in my town? How much is being released and **by whom**?*



*Does the factory near my school release **cancer-causing chemicals**?*

*How can my classmates and I encourage industries to **reduce** the amount of chemicals released into the environment?*

EPA's Toxics Release Inventory (TRI) can help you find the answers!

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Overview

- What is the Toxic Release Inventory (TRI)?
- Why should students care about TRI?
- How can TRI data be used in the classroom?
- What can students do with TRI data?
- Who can provided more information about TRI?

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What is TRI?

- TRI is an EPA information resource that can help you learn about toxic chemical releases from certain facilities **in your neighborhood.**
- TRI can tell you about:

Air, water & land releases

Waste transfers

Recycling

Pollution prevention

- TRI includes data about approximately **20,000 facilities** across the country and covers **more than 675 toxic chemicals.**

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TRI is EPA's premier "Right-to-Know" program

Right-to-Know (RTK):

- We all have the right to know about the chemicals to which we may be exposed to in our daily lives.
- This principle is authorized under Section 313 of the **Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA).**
- This law requires EPA to collect, maintain, and provide public access to the TRI data.

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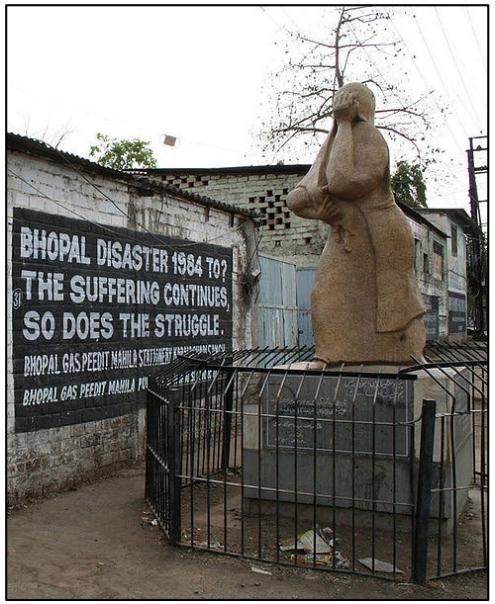
What led to the creation of TRI?



Bhopal Memorial for the 1984 toxic gas release

Bhopal, India December 1984

- Methyl isocyanate gas was released at a Union Carbide chemical plant.
- Thousands died the first night, thousands more since.
- Survivors continue to suffer with permanent disabilities.

Institute, West Virginia August 1985

- The only place in the U.S. that produced Methyl isocyanate was Union Carbide's Institute Plant
- 5,000 lbs. of aldicarb oxime leaked (135 hospitalized)

Environmental justice concerns put pressure on lawmakers to act to prevent future catastrophes and protect communities by making information on toxic chemical releases more widely available.

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Responses to Environmental Catastrophe

- These events led to increased concern about **local preparedness** for **chemical emergencies** and the **availability of information** on hazardous substances.
- The passage of the **Emergency Planning and Community Right-to-Know Act** in 1986 was part of the United States' response.

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TRI Data Belongs in the Classroom

TRI data:

- Is accessible to students of **all ages**
- Allows students to **engage with their local community**
- Provides an opportunity for students to **conduct data-based research**
- Offers experience in the application of **the scientific process** and weighing of **evidence**.
- Highlights the importance of **informed decision-making**
- Demonstrates **ways in which government, industries, and citizens work together** to build stronger, healthier communities
- Relates to a **wide range of fields** from biochemistry to sociology.

Students can use TRI to:

- Identify how many TRI facilities operate in the community and where they are located.
- Identify which chemicals are being released by TRI facilities.
- Track increases or reductions of toxic chemical releases from facilities located in the community over time.

Possible applications:

- Conduct a research project using TRI data and GIS examining the environmental justice issues of a particular community
- Create a chemical profile on to determine profile to learn about the concept of risk and exposure
- Examine how access to information and public pressure affect industry behavior

Why Should Students Care About TRI?

- Clubs/student organizations can use TRI data to design projects that advocate for environmental and community health
- TRI can provide the basis for research projects in various fields
- TRI is frequently used in the news and to solve every day problems.
- Analyzing and using TRI data helps students understand the importance of civic engagement and lead to a lifetime of public service

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TRI For Middle School and High School Students

- The TRI for Educators provides a list of activities and lessons to help introduce students to the major concepts related to TRI
- TRI for Educators also offers guides aimed at student that explain how to create a community factsheet that include reflection questions and follow-up activities
- Analyzing and using TRI data in school will help students understand the importance of civic engagement and lead to a lifetime of public service

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TRI for College Students and Researchers: The TRI University Challenge

Objectives:

- Expose students to TRI information
- Support development of a diverse portfolio of innovative projects using TRI data
- Create a "force multiplier" for TRI

Outcomes:

- Partnered with 20 schools
- Interacted with over 200 students
- Journal articles, university awards, publicly-accessible data tools, YouTube data use tutorials

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Disclaimer

The TRI data uses referenced in the projects and materials discussed in the slides that follow are provided as examples. Mention of these projects and materials does not constitute an EPA endorsement of their use, or of the individuals, groups, and organizations who developed them or their conclusions.

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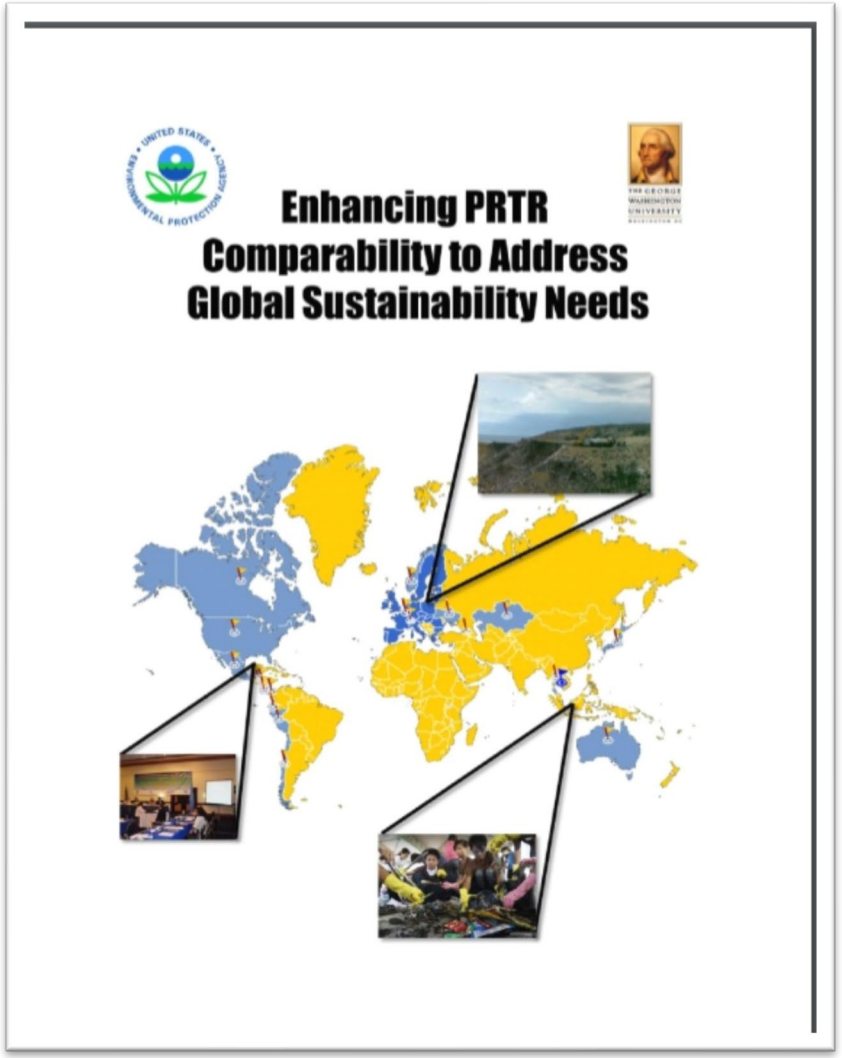
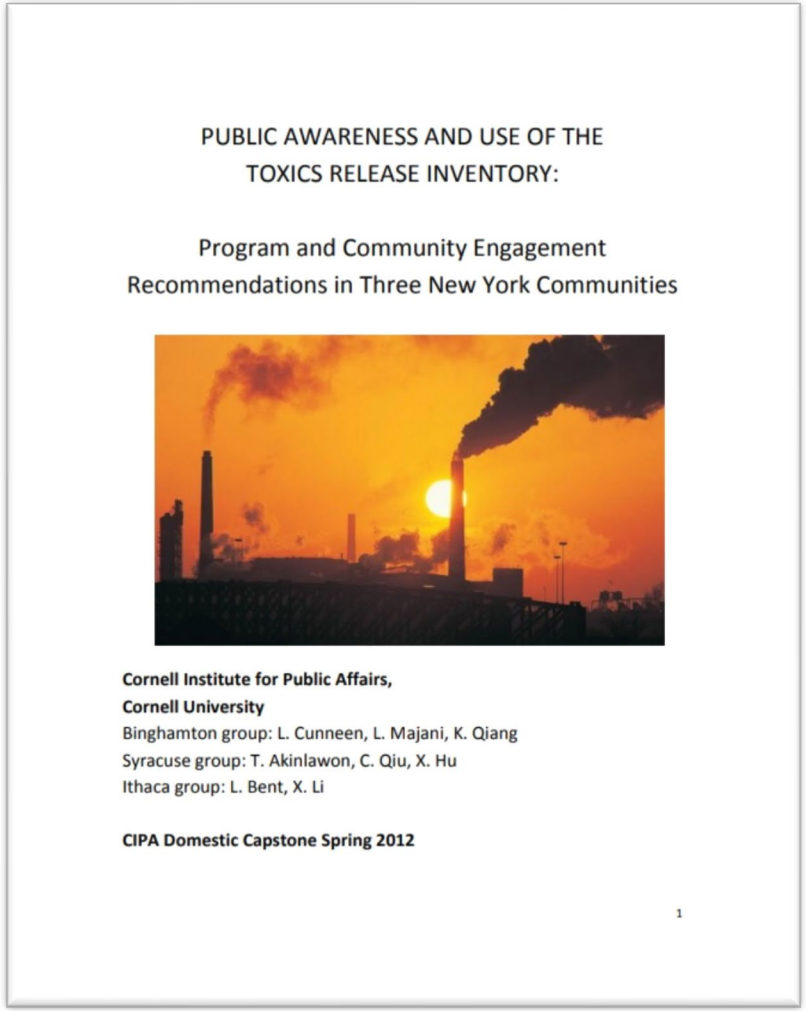
George Washington University International Analysis:

Master's students from GWU's Environmental Resource Policy Program identified recommendations for enhancing the comparability of data from TRI-like programs (known as Pollutant Release and Transfer Registers) around the world.



Cornell Institute for Public Affairs, Cornell University

Capstone Fellows at the Cornell Institute for Public Policy researched potential uses of TRI data by EPA and other stakeholders. Students conducted research in three communities in central New York: Binghamton, Syracuse and Ithaca.



PUBLIC AWARENESS AND USE OF THE
TOXICS RELEASE INVENTORY:

Program and Community Engagement
Recommendations in Three New York Communities

Cornell Institute for Public Affairs,
Cornell University
Binghamton group: L. Cunneen, L. Majani, K. Qiang
Syracuse group: T. Akinlawon, C. Qiu, X. Hu
Ithaca group: L. Bent, X. Li

CIPA Domestic Capstone Spring 2012

1

What Should Students Know About TRI?

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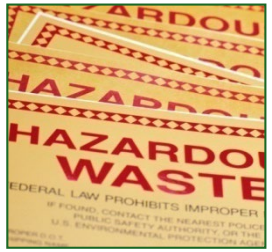
Facilities that Report to TRI

1. Facility must be in a TRI-covered industry sector or category.
2. Facility must have the equivalent of at least 10 full-time employees.
3. Facility must manufacture or process more than 25,000lbs. or use more than 10,000 lbs. of a listed chemical per year.



Hazardous Waste Management

Coal/Oil Electricity Generation

Federal Facilities

Certain Mining Facilities

Manufacturing*

*includes food, chemicals, plastics, computers, wood, textiles, printing/publishing

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What information do facilities report to TRI?

- **On-site** releases to:
  - Air
  - Water
  - Land
- Transfer of chemical waste to **off-site** location
- **Waste management:**
  - Recycling
  - Treatment
  - Energy Recovery
- **Pollution prevention** activities

What is a “release”?

A "release" refers to different ways that toxic chemicals from industrial facilities enter the:

The likelihood of residents coming into contact with toxic chemicals depends on the type of release, the amount of the release, the distance from the source, and other factors.

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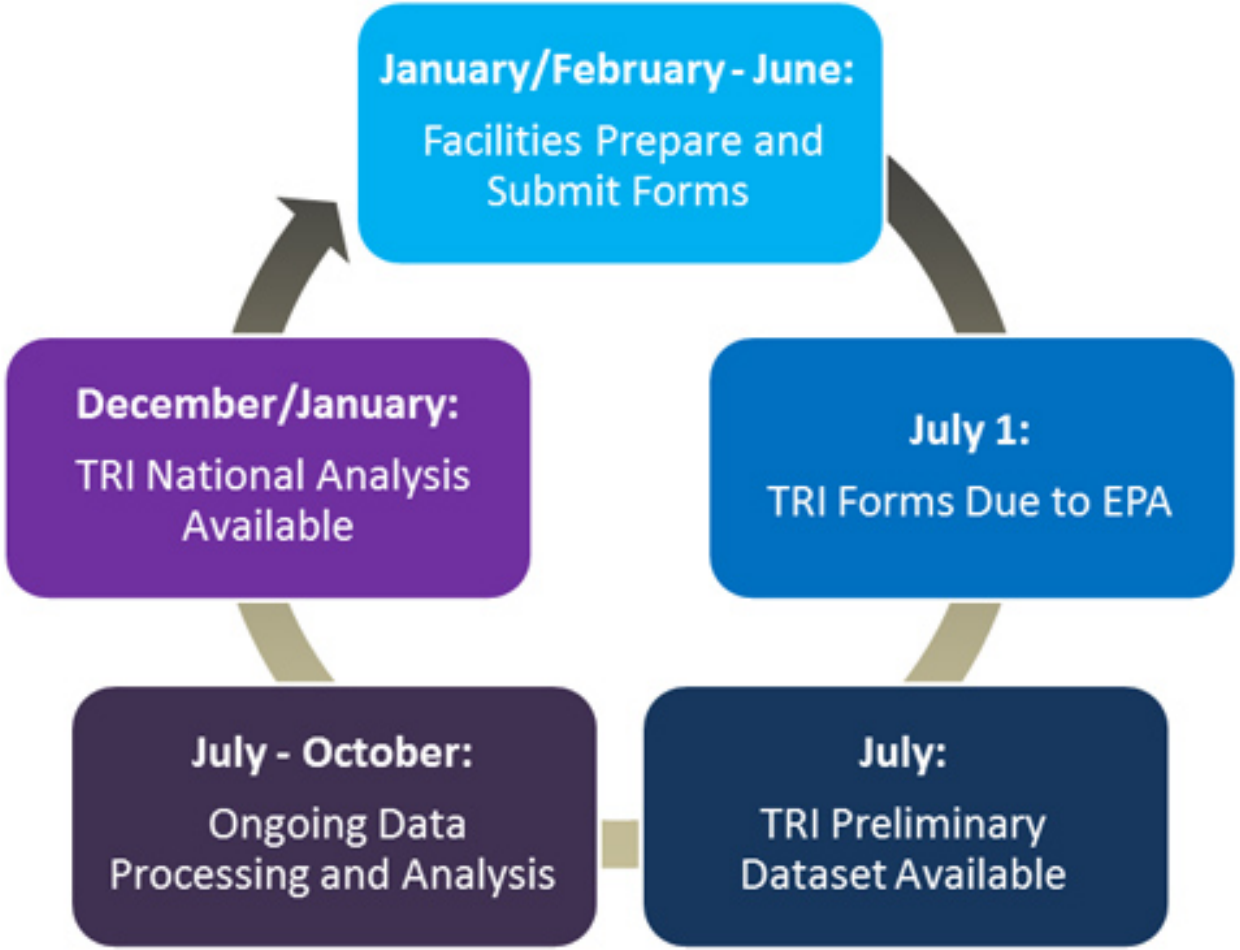
Annual TRI data cycle



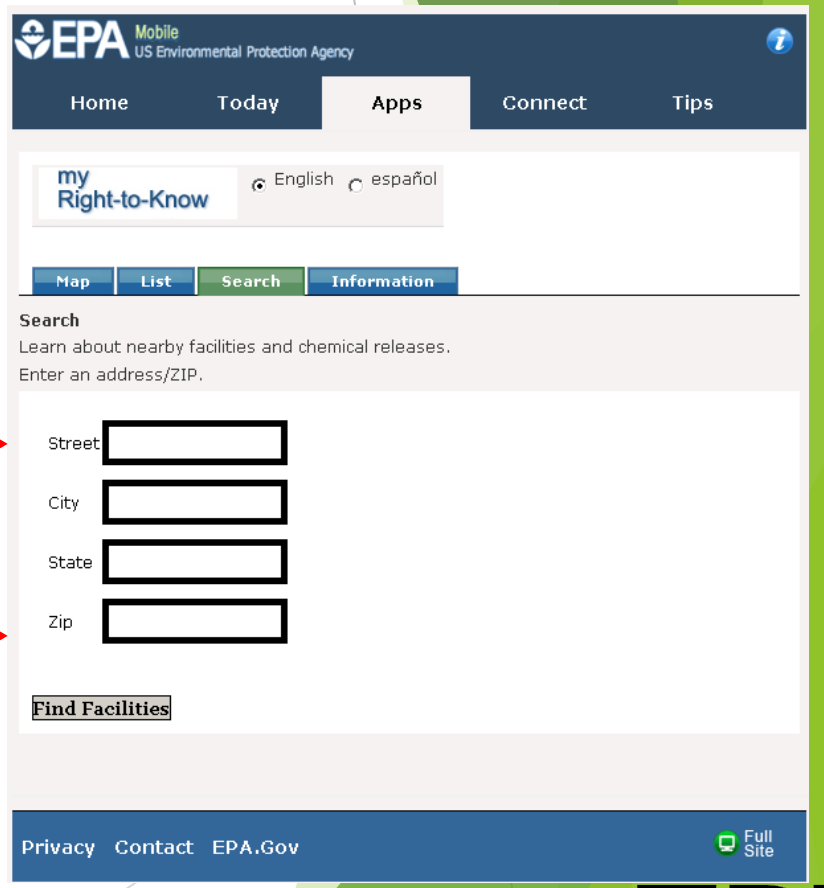
How to Find & Use TRI

What toxics are in your neighborhood?
Access TRI data by using My Right-to-Know (myRTK)

Access the following information over the Internet via a computer or smart phone:

1. Go to: www.epa.gov/tri/myrtk
2. Enter your location
3. Click "Find Facilities"

myRTK is also available in Spanish

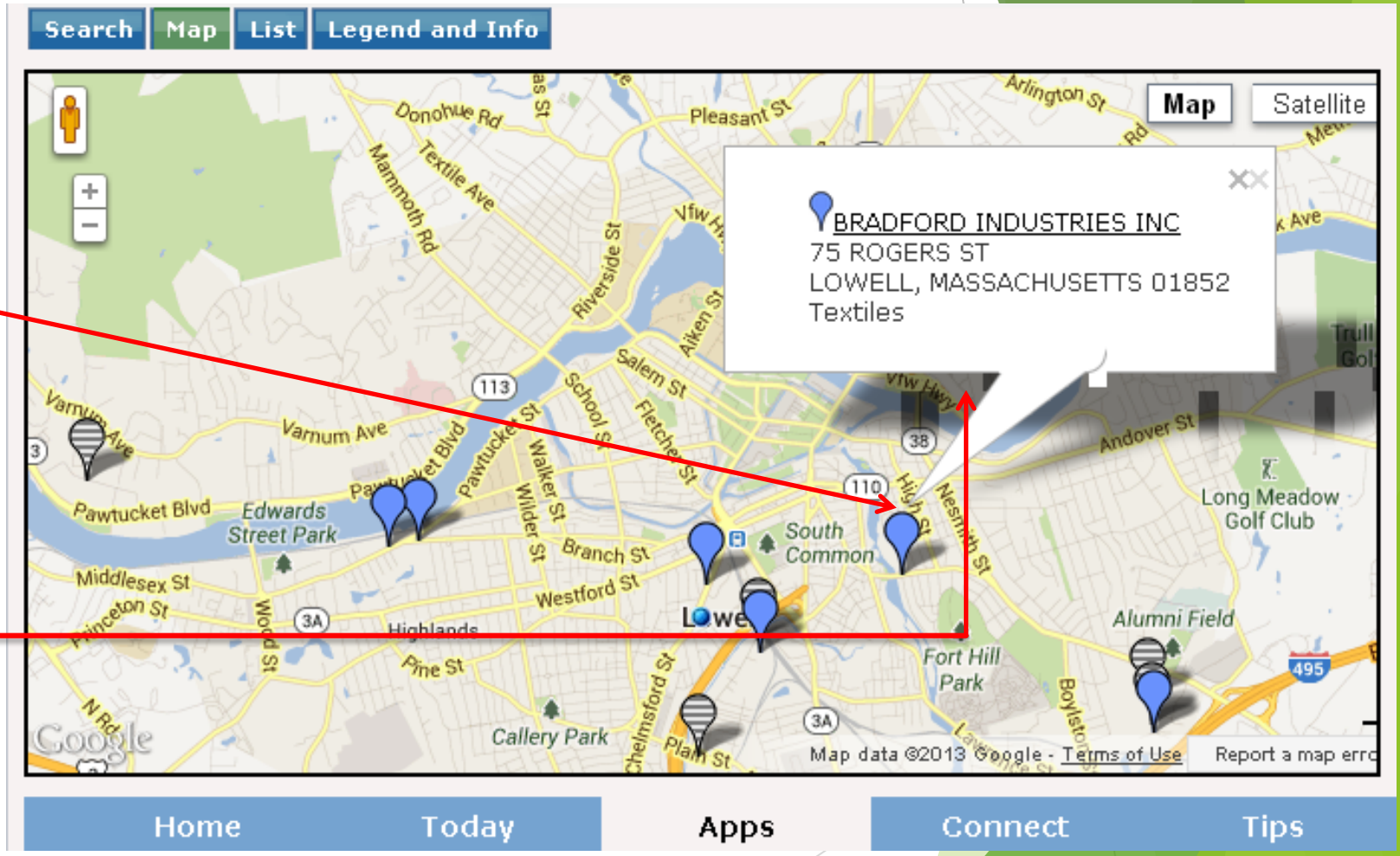


Use myRTK to find TRI reporting facilities

The map shows TRI facilities in your area.

You can learn more about a facility by clicking on it.

To see detailed information about a facility, click on the name.



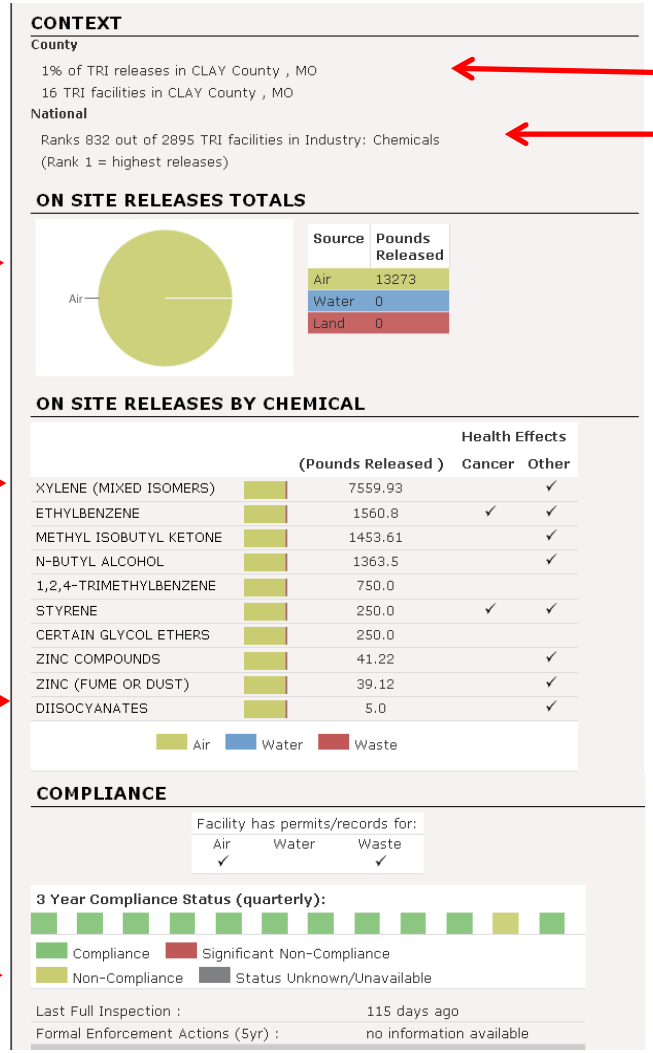
Use myRTK to learn about TRI releases

Click on a facility name and you'll see:

The amount of toxic chemicals this facility released to air, water, and land in the latest reporting year.

The amount of releases in the latest reporting year, organized by chemical.

If the facility has violated certain environmental laws.



How much this facility contributed to total TRI releases in the county.

How the facility's releases compare to others in the same industry sector.

Whether the chemicals released could possibly cause cancer or other health effects.

Use myRTK to learn about toxic chemicals released from TRI facilities

Click on a chemical to learn about its potential health effects.

ON SITE RELEASES BY CHEMICAL

		(Pounds Released)	Health Effects Cancer	Other
XYLENE (MIXED ISOMERS)		7559.93		✓
ETHYLBENZENE		1560.8	✓	✓
METHYL ISOBUTYL KETO		1453.61		✓

Map | List | Search | Information

XYLENE

Adverse health effects from chemical exposures depend on many factors, including toxicity, environmental fate, and the extent of exposure to the chemical.

Cancer

Toxicity Information Not Available.

Other Health Effects

Body Weight

Alterations of average body mass at critical time-points, e.g., birth.

Neurological

Referring to the brain, spinal cord, and nerves. Effects may include impaired sensory and motor signaling.

Other Systemic

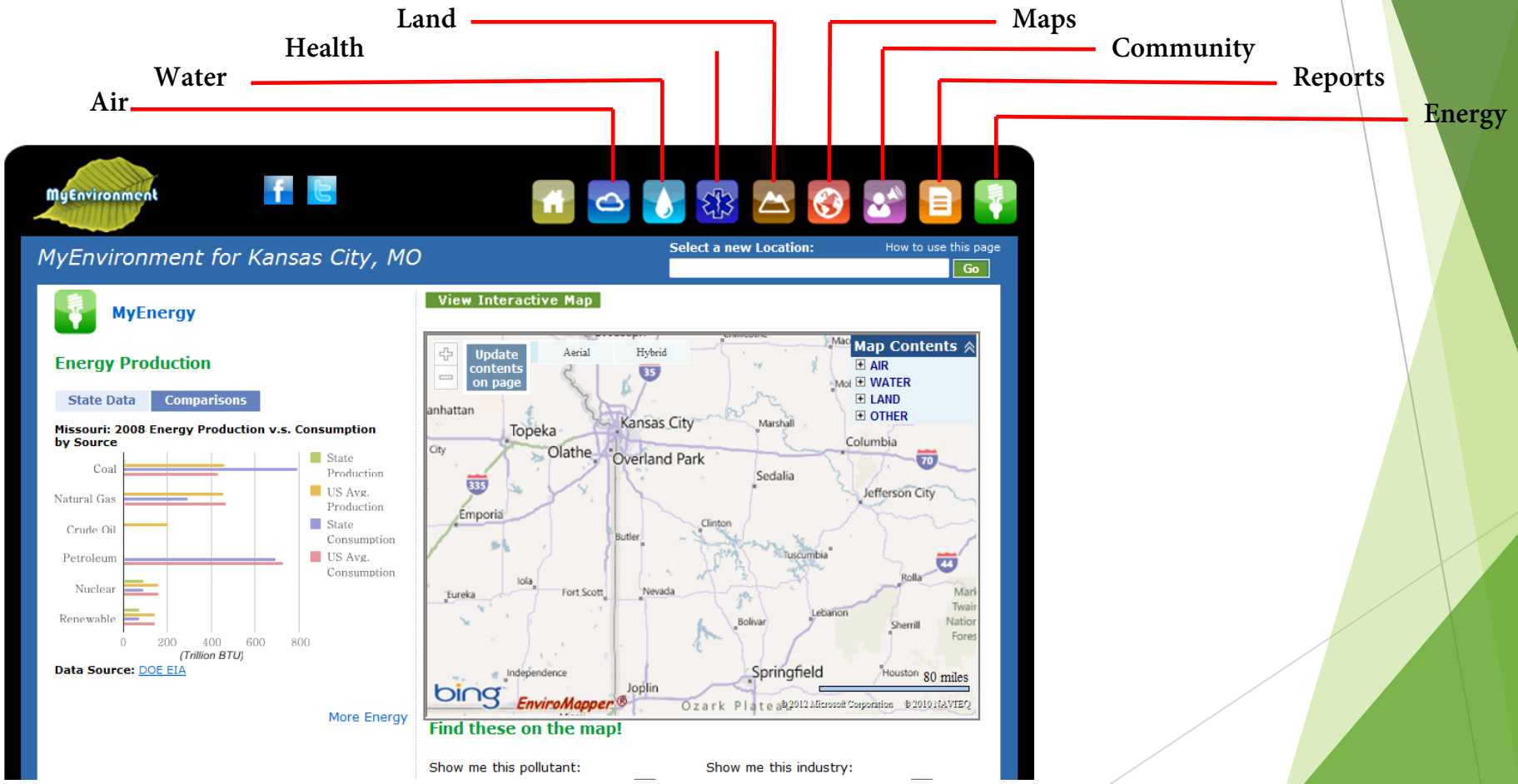
Effects not otherwise categorized.

Chemical toxicity Information comes from TRI-CHIP datasets.

Privacy Contact EPA.Gov Full Site

EPA's MyEnvironment tool: Find more information about your community

www.epa.gov/myenvironment



For more information about TRI:

- Contact your **EPA Regional TRI Coordinator:** www.epa.gov/tri/contacts
- Call EPA's **TRI Information Center:** 1-800-424-9346. Select menu option #3 for TRI.
- Visit the **TRI Program's website**: www.epa.gov/tri and www.epa.gov/tri/communities.
- Check out the **TRI Pollution Prevention (P2) Search Tool**: www.epa.gov/tri/p2.
- Contact the **TRI Help Desk** by email: tri.help@epa.gov.

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You have tough questions and the TRI Program and EPA is here to help answer them

I thought a factory in my community released a lot of pollution. TRI showed me that this factory dramatically reduced the amount of toxic chemicals it released into the environment over the past seven years.

I found out using TRI which chemicals are released in the greatest quantities. I am going to find out what can be done to reduce those releases.

TRI showed me that the factory by my daughter's school releases chemicals that could potentially cause cancer. Now I'm going to find out more.

TRI gives you information to better understand toxic chemical releases in your community.