



Environmental Releases – Recognition, Health Effects, and Reporting

Facilitator Guide

Acknowledgements

The Midwest Consortium developed this program under cooperative agreement number U45 ES06184 from the National Institute of Environmental Health Sciences (NIEHS).

We encourage you to comment on these materials. You may give your suggestions to your Program Director.

Warning

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The material was prepared for use by experienced instructors for training those who may discover environmental releases or observe possible dumping violations. Authors of this material have prepared it for the training of this target audience as of the date specified on the title page. Users are cautioned that the subject is constantly evolving. Therefore, the material may require additions, deletions, or modifications to incorporate the effects of that evolution occurring after the date of this material preparation.

Disclaimer

This training program covers basic hazard recognition, identification, reporting, and self-protection for individuals who may observe the preliminary stages of an event. It does not provide the necessary hazard recognition and protective skills required to approach a drum or other container which may be hazardous. Emergency responders receive substantial training in order to protect themselves when approaching hazardous material or stopping releases.

Content was finalized on February 13, 2023, and all web links are active as of that date; if you find an error, please inform the Program Director so that it can be updated.

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Overview

Facilitator Preparation

This Facilitator Guide provides a guideline for presenting the material and includes the following types of information: objectives of the sections and guidance for facilitating them, exercise directions, and issues that might be raised by the class.

Because of the diversity of interests of participants, it is helpful to keep this program focused on events that may occur in your area. Know the audience, in order to prepare for questions that are likely to arise.

In order to better guide the program, ask participants what they want to learn. If responses are outside the scope of this program, make the participants aware of other training that may be available, or report additional training needs back to your program director.

The program can be tailored to the interests of participants via the exercises available at the end – Using the Toxic Release Inventory, Using EJSCREEN, and Meth Lab Recognition. Note there are other screening tools that could be used, such as the Climate and Economic Justice Screening Tool, available at: <https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>

Note these final exercises are not found in the Participant Guide and will need to be printed for participant use. Participant Guides for Using EJSCREEN and Meth Lab Recognition can be found in the Appendix to this guide. Using the TRI can be presented via PowerPoint which is located at: <https://mwc.umn.edu/catalog/>. It is recommended

that you print and make copies of the Using the TRI PowerPoint (3-slide Handout option) so participants can take notes and have all content to refer to in the future.

The facilitator should also:

- Carefully review this Facilitator Guide and the Participant Guide
- Ensure operation of audiovisual equipment prior to the session
- Test all web links prior to the session
- Be familiar with [NIEHS Minimum Health and Safety Training Criteria](#)
- Be familiar with the OSHA’s HAZWOPER Standard, 29 CFR 1910.120

Graphics should be used to assist with in-class instruction. The Participant Guide contains many illustrations which should be referred to.

Sample Agenda

Welcome & Program Overview.....	20 minutes
Unsolved Mysteries	30 minutes
Hazard Recognition	40 minutes
Reporting what you see.....	20 minutes
Health Effects	30 minutes
Resources.....	20 minutes
Exercise(s)	60 minutes
Closing Session.....	20 minutes

Lesson outline forms may be helpful when drafting your presentation outline. Examples of lesson outline forms are provided below.

Lesson Plan Form 1

Teaching Methods for This Lesson Plan	Material/Audiovisual Requirements
<ul style="list-style-type: none"> <input type="checkbox"/> Presentation <input type="checkbox"/> Discussion <input type="checkbox"/> Question and answer <input type="checkbox"/> Hands-on simulation <input type="checkbox"/> Team teaching <input type="checkbox"/> Small-group exercises <input type="checkbox"/> Case study <input type="checkbox"/> Other (describe) 	<ul style="list-style-type: none"> <input type="checkbox"/> Training Manual <input type="checkbox"/> Supplemental material <input type="checkbox"/> Online platform (Zoom etc.) <input type="checkbox"/> PowerPoint Presentation <input type="checkbox"/> Website <input type="checkbox"/> Internet <input type="checkbox"/> Hands-on simulation <input type="checkbox"/> Other (describe)
Reference Materials	Special Space or Facility Requirements
	<p>List any room size or special facility regulations here, such as set-up areas, equipment storage concerns, etc.</p>
Suggested Discussion Questions	Suggested Facilitator Preparation

Lesson Plan Form 2

Subject Area or Element	Detail	Reference Number or Citation
Major subject heading or Roman numeral item from outline format.	Detailed breakdown of subject area or element. This area will necessarily occupy more space than the column to the left.	E.g., page number in training notebook, section number of regulation, or audiovisual material.

Small-group Exercises

Small-group exercises can be found throughout this training course. The purpose of these exercises is to involve participants in clarifying information, identifying options, and applying skills. Be sure to allow sufficient time for these exercises.

Exercises enhance the learning process. Therefore, it is strongly recommended that you make them comfortable so that everyone can participate. Assume that every class will have participants with a wide range of communication skills. Some will have no problems participating in group discussion, while others may have a hard time talking in front of the group.

Suggestions for facilitating small-group exercises and discussions include:

- Allow participants to freely express their values, attitudes, and opinions.
- Do not judge a participant's responses.
- Facilitate discussion by paraphrasing and clarifying. It is seldom appropriate for the instructor to give opinions.
- Avoid putting people on the spot. Instead of asking individuals for answers, have a volunteer spokesperson present findings to the entire group.
- Keep the groups focused on the task at hand. Because small-group activities can draw heavily on the participants' personal experience, sometimes conversation can drift.
- Be alert to the potential for one person to dominate work in small groups. If you see this happening, facilitate participation by other members of the group.
- Keep participants alert and interested by encouraging participation. If the groups are not participating or giving only cursory answers, ask them probing questions linked to previous work or life experiences.

Evaluation

Evaluation provides input from participants regarding value to them, achievement of learning objectives and insights into how to improve the program. NIEHS supports 'model programs' that employ interactive training methods to build skills; see https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=11266&file_name=WTP_Minimum_Criteria_062818_Final_508.pdf. Collection and use of evaluation data are key to program improvement. Adherence to these criteria is a term-and-condition of NIEHS funding.

Evaluation forms are shown at <http://mwc.umn.edu>.

Successful completion of the program is based on attendance for the entire program, documented with the sign-in sheet.

Introduction

Time Requirement: 20 minutes

Number of Facilitators: 1 or more, consistent with ratio shown in Minimum Criteria

Objectives

When they complete this program, participants will be better able to:

- Identify physical, biological, and chemical hazards
- Recognize how to safely observe a potential hazard
- Describe important observations
- Identify to whom you should report the observations
- Describe how the body can react to hazardous substances

Materials

- Registration Materials and Evaluation Forms
- Sign In Sheets
- Participant Guide
- Whiteboard or equivalent; markers

Teaching Methods

Presentation/Discussion

Suggested Facilitator Preparation

- Review Participant Guide
- Research and prepare local examples of potential hazardous material releases

Minimum Content Requirements

- Review of objectives
- Share examples of releases

Questions You May Be Asked

“Do I need special training before this course?” Assure your participants that the course is for community members with no emergency training.

“Will we learn how to eliminate threats from hazardous materials?” Facilitate a discussion about how extensive training and specialized equipment is required to deal with hazardous materials. The role of the community members is to recognize and report hazardous materials.

Presentation of the Session

Review the objectives

Ask: Are there other topics you want to discuss?

- Make a list where all can see
- Remember to come back to this list during the program

Ask: “Do you know of examples of hazardous materials in your community”?

- Be prepared to give some examples if none are known by the participants.

Unsolved Mysteries

Time Requirement: 30 minutes

Number of Facilitators: 1 or more, consistent with ratio shown in Minimum Criteria

Objectives

When they complete this section, participants will better be able to:

- Recognize potential hazardous materials
- Recognize the need for accurate information gathering
- Define hazardous material

Materials

- Whiteboard or equivalent; markers
- Participant Guide

Teaching Methods

- Small group activity
- Discussion

Suggested Facilitator Preparation

- Review Participant Guide
- Based on the participants, select the Unsolved Mysteries for the exercise

Minimum Content Requirements

- Unsolved Mysteries Exercise
- Definition of a hazardous material

Questions You May Be Asked

“If we can’t collect much information, should we move closer to get a better look?”

Facilitate a discussion regarding the risks of getting too close.

“Who do we call? 9-1-1?”

Unless there is a fire or injury, 9-1-1 may not be the best number to call. We will address this later in the program.

Presentation of the Session

Unsolved Mysteries Exercises and Examples from Your Experience

Divide the class into groups of two to six participants. Refer the groups to the directions in the Participant Guide. Tell the groups which Mysteries/Example from Your Experience they are to complete. Let the groups know they will be reporting back to the whole group. Announce the time every five minutes so they will know when to move on

to the next one. Facilitate a report back from each group. Include in this discussion the meanings of “hazardous material.”

What is a Hazardous Material?

Review the legal and practical definition of a hazardous material.

Summary

Reinforce the items from the Participant Guide

Hazard Recognition

Time Requirement: 40 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Objectives

When they complete this section, participants will better be able to:

- Identify physical, biological, and chemical hazards
- Describe important characteristics of the scene
- Recognize how to safely observe a potential hazard
- Recognize labels, placards, and types of containers

Materials

- Participant Guide
- Whiteboard or equivalent; markers
- ERG (physical copies or internet access)

Teaching Methods

Presentation/Discussion
Small Group Activities

Suggested Facilitator Preparation

- Review the Participant Guide
- Prepare lists of potential physical, biological, and chemical hazards in your community
- Ensure internet access if planning to access ERG through devices

Minimum Content Requirements

- Types of hazards – Physical, Biological, Chemical
- Labels and Placards
- Containers

Questions You May Be Asked

“How am I supposed to remember all these symbols and shapes”? Facilitate a discussion of what they will report and what the police or fire department will actually know about. It’s likely a few key pieces of information will be sufficient. If not risky, taking pictures or writing down what you observe can prove to be helpful.

Presentation of the Session

Introduction

Ask: What hazardous materials do you think are in your community? List where all can see

Ask: If we were to organize this list, are some of them chemicals, some biological agents, and some hazards that cause personal injury such as a burn?

Organize the list into groups so all can see

Brainstorm with the class what characteristics of the scene might be important to remember. List where all can see and add any that were missed from the list in the Participant Guide.

Physical Hazards

Familiarize participants with the radiation symbol as seen in the Participant Guide, the dangers of vapor clouds and confined spaces, and how to observe hazards.

Ask: “Are there some places in this community where physical hazards can be found?”

Biological Hazards

Present the Infectious Materials symbol as found in the Participant Guide.

Ask: “Where might infectious materials be found in this community?”

Chemical Hazards

Ask: “What are some examples of chemical hazards that could be found in this community?”

Labels and Placards

Review the shapes, colors, numbers, and symbols found on labels and placards as seen in the Participant Guide. Remember that this is a community audience and the goal is to introduce them to this topic and what is most important. Emphasize that labeling is a helpful tool in assessing a potential hazardous material. Notes and photos can be taken to help identify the material. The internet is a good source for information found on labels and placards.

Using the ERG

Introduce ERG books or online version as a resource.

Labels and Placards Checklist

Ask: “What should you observe from labels and placards?” Ensure all items from Participant Guide are noted.

Ask: “How should you observe them?” Ensure all answers from Participant Guide are noted.

Placard and Labels Exercise

In groups, have the participants use the previous pages in the Participant Guide as a resource to complete the exercise. Facilitate a report back / discussion.

Containers

Introduce various containers (carriers, tanks, drums, cylinders). Refer to the graphics in the Participant Guide.

Chemical Container Checklist

Ask: “What should you observe about containers?” Ensure all items from Participant Guide are noted.

Ask: “How should you observe them?” Ensure all answers from Participant Guide are noted.

Container Shapes Exercise

In groups, have the participants use the previous pages in the Participant Guide as a resource to complete the exercise. Facilitate a report back / discussion.

Reporting What You See

Time Requirement: 20 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Objectives

When they complete this section, participants will be better able to:

- Describe important observations
- Identify to whom you should report the observations

Materials

- Participant Guide
- Information collection form
- Exercise

Teaching Methods

- Discussion
- Small group activity

Suggested Facilitator Preparation

- Review content of Participant Guide including information collection form and exercise.

Minimum Content Requirements

- What's Going on Here Exercise

Questions You May Be Asked

1. Should I talk with people at a nearby company or residence to get more information? Address questions about where community members' responsibilities end. Community members should not jeopardize their own safety. The responsibility for investigation lies with local officials.
2. Should I make a report when I am observing, or should I leave? Address the topics of personal safety and timeliness of reporting. The observer should always move to a position of safety first and then report in a timely manner.

Presentation of the Session

- Discuss who may be the appropriate organization to call for various observed potential hazards.
- Information Collection Form
- Introduce this page in the Participant Guide as a way to organize information.

Exercise – What's Going on Here?

- Have each group complete the form with observations.
- Facilitate a discussion.

Health Effects

Time Requirement: 30 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Objectives

When finished with this section, participants will be better able to:

- Describe how the body can react to hazardous substances
- Identify what to do if you think you have been exposed

Materials

- Whiteboard or equivalent; markers
- Participant Guide

Teaching Methods

Presentation/Discussion

Suggested Facilitator Preparation

- Review the Participant Guide
- Identify local chemicals to use as examples or use hazards previously identified by participants

Minimum Content Requirements

- How do chemicals enter your body?
- When will effects of chemical appear?
- Where will the effects appear?
- Health effects before you leave the scene
- Health effects after you leave the scene

Questions You May Be Asked

“How can I find more information about chemicals I might have been exposed to?”

Refer participants to online resources such as NIOSH Pocket Guide or Emergency Response Guidebook.

Presentation of the Session

Health Effects: How, When, and Where?

From the potential hazards identified previously:

Ask: How might residents come in contact with these hazardous materials?

Ask: What happens if you are exposed?

Ask: How could you avoid or reduce exposure?

Use responses to the above questions to teach the key terms such as inhalation, chronic, systemic etc. found in the Participant Guide.

Health Effects Before You Leave/After You Have Left the Scene

Discuss what to be aware of and the actions that may be necessary after potential exposures.

Summary

Reinforce key points as found in Participant Guide

Resources

Time Requirement: 20 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Objectives

When they are finished with this section, participants will better be able to:

- Describe the responsibilities of some federal, state, and local agencies
- Identify resources that are available

Materials

- Participant Guide
- Internet Access
- Whiteboard or equivalent; markers

Teaching Methods

Presentation/Discussion

Suggested Facilitator Preparation

- Review the Participant Guide
- Review the responsibilities of the agencies and the scope of legislation.
- Review internet resources
- Prepare examples for use of the resources

Minimum Content Requirements

- Identify agencies which may serve as resources
- Review legislation which is relevant to hazardous releases
- Access internet resources

Questions You May Be Asked

“Are these who I should call if I spot a problem?”

Unless there is a fire or medical emergency (9-1-1), calling your local resources such as health department or the County Sherriff are best avenues to report a potential hazardous material release.

Presentation of the Session

- Agencies
- Introduce the agencies and their roles. Provide an example of how they could be used for information.
- Legislation
- Based on participants, highlight any particularly relevant legislation. Provide an example of how it could be used for information.

- Internet
- Provide an example of how the internet can be used to gather information. Have participants access several websites.

Exercises

Select an exercise or exercises from the Facilitator Guide Appendix to utilize here. The Appendix includes the Participant Guide and Facilitator Guide for three exercises for use in REL. In addition to those listed below,, or an alternative screening tool could be used, such as the Climate and Economic Justice Screening Tool, available at:

<https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>

- Using the TRI
- Using EJSCREEN
- Meth Lab Recognition

Summary and Closing

Time: 20 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Materials

- Whiteboard or equivalent; markers
- Pencils
- Evaluation Forms
- Certificates

Objectives

Review the course objectives

Teaching Methods

Discussion

Suggested Facilitator Preparation

Be sure you have evaluation forms

Minimum Content Requirements

- Answer remaining questions
- Evaluation
- Thank participants

Questions You May Be Asked

“How do I get more training?” Share with participants other training opportunities.

Presentation of the Session

Remind participants that the Participant Guide can be accessed at <https://mwc.umn.edu> where the links can be used to access resources.

- Answer any remaining questions. Ensure you have answered all questions from the introductory session.
- Explain the purpose of the course evaluation form: to get feedback from participants about the course and facilitator(s). This feedback will help facilitators understand their strengths and weaknesses and will point out any changes that need to be made to the program.
- Have participants complete the evaluation form. Collect forms and thank all participants; provide certificate/documentation of training.

Facilitator Follow up

Make this exercise better:

Forward suggestions to your Program Director

Are there other ‘Questions you may be asked’ that should be included?

Appendix

Select an exercise or exercises from below to utilize here. The Appendix includes the Participant Guide and Facilitator Guide for three exercises for use in REL. In addition to those listed below, or an alternative screening tool could be used, such as such as the Climate and Economic Justice Screening Tool, available at:

<https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>

- Using the TRI
- Using EJSCREEN
- Meth Lab Recognition

Using Toxic Release Inventory

Time Requirement: 60-90 minutes

Number of Instructors: 1 or more, consistent with ratio in the Minimum Criteria

Materials

Using the TRI PowerPoint (available at: <https://mwc.umn.edu/catalog/>)

- Participant Guide (printed 3-slide Handout option of the PowerPoint)
- Laptops or computers for each group/individual
- Internet access
- Whiteboard or equivalent; markers

Objectives

When completed, participants will be better able to:

- Access TRI
- Demonstrate the use of TRI to:
 - Identify local sources of emissions
 - Identify chemicals being released
 - Identify violations of environmental laws
- Discuss why this information is important

Teaching Methods

- Discussion/Presentation
- Small group exercise

Suggested Facilitator Preparation

- Review Participant Guide
- Review TRI websites
- Test web links prior to the session and if any are inoperative please notify the Midwest Consortium at hilbertj@ucmail.uc.edu

Minimum Content Requirements

- Access and explore TRI
- Discuss why the information is important

Questions You May Be Asked

Where do the data come from?

The data are self-reported from identified facilities.

Who must report data?

In order to report data, a facility must have 10 or more full time employees, manufacture/process/use a TRI-listed chemical, AND be within specific industries such as manufacturing, mining, electric power generation.

What if I don't know the answers to some of the questions?

The EPA addresses a number of other questions [about the Toxic Release Inventory](#) on their website, as well.

Suggested Presentation of the Exercise

This session can be presented as follows:

If in-person, divide the class into small groups of 4-6. Using the PowerPoint, walk through the TRI website. Direct the groups/individuals to follow along on their computer, exploring TRI with the zip code of their choice and comparing it to the one shown in the PowerPoint.

Facilitate discussion.

Facilitator Follow up

Make this program better:

- Forward suggestions to your Program Director
- Are there other 'Questions you may be asked' that should be included?

Using Toxic Release Inventory

This exercise can be presented via the Using the TRI PowerPoint, available at:

<https://mwc.umn.edu/catalog/>

Note: It is recommended that you print and make copies of the PowerPoint (3-slide Handout option) so participants can take notes, complete the exercise, and have all content to refer to in the future

Using EJSCREEN

Time Requirement: 1 hour

Number of Instructors: 1 or more, consistent with ratio shown in Minimum Criteria

Objectives

When completed, participants will be better able to:

- Access EJSCREEN
- Discuss why this information is important
- Demonstrate the use of EJSCREEN to:
 - Identify environmental and socioeconomic differences between areas
 - Identify areas with potential environmental quality issues

Materials

- Participant Guide
- Laptops or computers for each group
- Internet access
- Whiteboard or equivalent; markers

Teaching Methods

- Discussion/Presentation
- Small group activity

Suggested Facilitator Preparation

- Review Participant Guide
- Review EJSCREEN websites
- Complete the EJSCREEN exercise for your location
- Prepare a handout for participants to take home with step-by-step screen shots that are relevant to your area
- Test web links prior to the session and if any are inoperative please notify your Program Director

Minimum Content Requirements

Use EJSCREEN to:

- Identify environmental and socioeconomic differences between areas
- Identify areas with potential environmental quality issues
- Identify uses for EJSCREEN

Suggested Presentation of the Exercise

This following is a suggested format for this exercise:

- Review the objectives.
- Ask: What is environmental justice? After input from the class, review the EPA definition found in the Participant Guide
- Briefly explain what EJSCREEN is and why the EPA created it.
- Divide the participants into small groups of 4-6.
- Give a brief overview of the exercise directions to the groups, including providing time estimates for completion of each part to help keep groups on track.
- Include any tips you learned on using it that you discovered in going through the process in preparation for the session. Refer to screen shots of the EJSCREEN website in this Guide.
- Address initial questions as a group, if appropriate, and individually, as they arise.
- Facilitate report back and discussion of wrap up questions in exercise.
- Answer any remaining questions.
- Make a list of expected uses—these may be helpful when ‘return participants’ are asked how training has been used.

Questions You May Be Asked

How does EJSCREEN decide what information to include?

EJSCREEN is a national-level screening tool. Therefore, to be included, data must be publicly available for the whole nation. (The scale is determined also to be large enough to assure that no single household can be identified.)

What if I have questions later on?

[EJSCREEN's FAQ page](#) may aid in addressing questions. Also, EJSCREEN has a very helpful [User Guide](#).

Facilitator Follow up

Make this exercise better:

- Forward suggestions to your Program Director

Using EJSCREEN

Overview

EJSCREEN is an Environmental Justice SCREENing and mapping tool that provides citizens access to environmental and socioeconomic information. The US EPA has constructed this tool so that comparisons can be made across cities, counties, states or across the country. Results can be displayed as maps or reports that include summaries of the information.

Objectives

When completed, participants will be better able to:

- Access EJSCREEN
- Discuss why this information is important.
- Demonstrate the use of EJSCREEN to:
 - Identify environmental and socioeconomic differences between areas
 - Identify areas with potential environmental quality issues

EJSCREEN - Environmental Justice Screening and Mapping Tool

What is environmental justice?

Per the EPA: “Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”

EPA has this goal for all communities and persons across this nation. It will be achieved when everyone enjoys:

- the same degree of protection from environmental and health hazards, and
- equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

What is EJSCREEN?

EJSCREEN is a screening tool created by the EPA to evaluate areas that may be candidates for additional consideration, analysis, or outreach. It allows the user to review environmental and socioeconomic indicators for geographic areas. It includes:

- 12 Environmental Indicators which use air quality data and proximity to various sources of waste
- 7 Socioeconomic Indicators related to income level, minority populations, education, language, and age
- 12 EJ Indexes. Each EJ Index is based on an Environmental Indicator and Socioeconomic Indicator; that is, they show how environmental and socioeconomic factors come together in the same area. There is one EJ Index for each Environmental Indicator.

For reference

- [EJSCREEN website](#)
- [EJSCREEN mapping tool](#)
- [EJSCREEN User Guide](#)

Exercise Directions

Using EJSCREEN

Work in small groups to complete the following worksheet.

Environmental indicators: Review the "[Overview of Environmental Indicators in EJSCREEN](#)" webpage.

Discuss the 12 environmental indicators. List 3 that are of interest to you.

1. _____
2. _____
3. _____

Socioeconomic indicators: Review the "[Overview of Socioeconomic Indicators in EJSCREEN](#)" webpage link.

Discuss the 7 socioeconomic indicators. List 3 that are of interest to you.

1. _____
2. _____
3. _____

Visit the [Environmental Justice Screening and Mapping Tool EJ Indexes website page](#).

Notice that the 12 EJ Indexes are named the same as the Environmental Indicators.

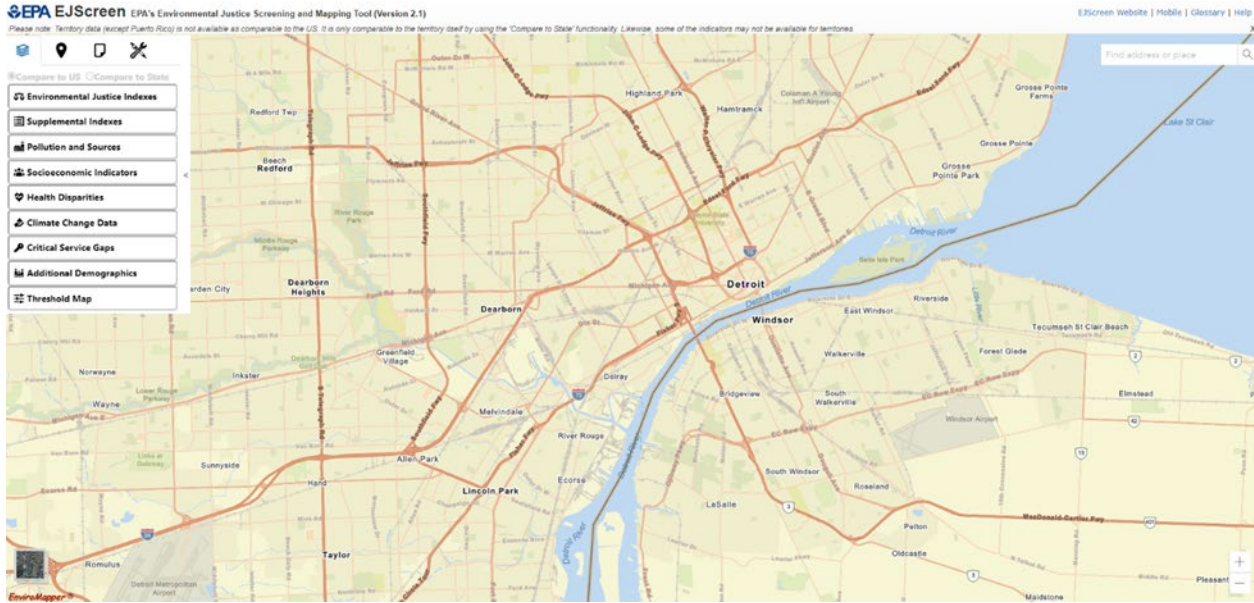
Reports

Visit the [EPA's Environmental Justice Screening and Mapping Tool](#):

In the upper right corner, enter a city and state OR a zip code of interest. Use your mouse to zoom in or out or drag the screen to the exact area of interest. Below is an example of what the starting screen for using the mapping tool looks like.

Location #1 _____

Exercise – Using EJSCREEN - Participant Guide

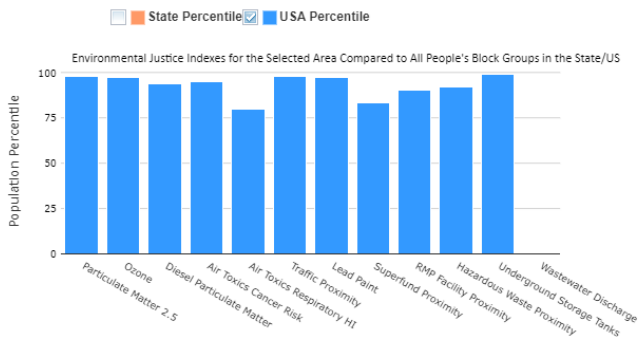


On the left side of the screen, click on the Reports tab and select Drop a Pin. Click the map on the exact area of your interest. The Chart or Report pop-up will appear. Click Add to Map to show a one-mile radius around your Pin. Select Explore Reports and a pop-up will appear with the information for Environmental Justice Indexes and Socioeconomic Indicators for a one-mile radius around your Pin. See example below.

Explore Reports

1 mile Ring Centered at 42.397918, -83.101788, MICHIGAN, EPA Region 5 (Population: 13,316)

Environmental Justice Indexes	Pollution and Sources	Socioeconomic Indicators
[Unselect All]		
<input checked="" type="checkbox"/> Particulate Matter 2.5	<input checked="" type="checkbox"/> Ozone	<input checked="" type="checkbox"/> Diesel Particulate Matter
<input checked="" type="checkbox"/> Air Toxics Cancer Risk	<input checked="" type="checkbox"/> Air Toxics Respiratory HI	<input checked="" type="checkbox"/> Traffic Proximity
<input checked="" type="checkbox"/> Lead Paint	<input checked="" type="checkbox"/> Superfund Proximity	<input checked="" type="checkbox"/> RMP Facility Proximity
<input checked="" type="checkbox"/> Hazardous Waste Proximity	<input checked="" type="checkbox"/> Underground Storage Tanks	<input checked="" type="checkbox"/> Wastewater Discharge



Exercise – Using EJSCREEN - Participant Guide

When using the report, note that a percentile of 80% does not mean that 80% in your circle are LOW INCOME, for example. It means that 80% of the US population has a lower value for that index or indicator.

Using your Report, complete the chart below (Location #1 column) for the area you selected compared to the rest of the US for the 3 EJ Indexes and socioeconomic indicators you choose.

Repeat the process for another area that you feel is different than the first, in terms of socioeconomics and/or environmental concerns.

Location #2 _____

Environmental Justice Index	US Percentile (Location #1)	US Percentile (Location #2)
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

Socioeconomic Indicator	US Percentile (Location #1)	US Percentile (Location #2)
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

How do your two locations compare? What do you think may be the reasons for differences or similarities?

Maps

Close the Report so that you are once again looking at the map and go to an area of your choice.

On the left side select Environmental Justice Index and then pick one of the options such as Lead Paint. Notice how the map will update to show Lead Paint percentiles.

See the upper right for interpreting what the different colors mean.

You can use your mouse to zoom in or out or drag to a different area. You can also click on the map at any point to learn details of that census block.

Experiment by picking a different EJ Index or another option such as Socioeconomic Indicator, Health Disparity or Critical Service Gaps. Note that some of these can add a new layer on top of your EJ Index or Socioeconomic Indicators.

Record two interesting observations:

1.

2.

What did you learn from the Maps that you did not learn from the Reports?

Discussion

Report back what you learned to the whole class. Discuss information reported by each group.

Why is this tool important?

How will you use what you have learned?

Help Resources

- The [EJSCREEN User Guide](#) or click on "Help" in the upper right corner of the Mapping Tool main page
- [EJSCREEN "How To" Videos](#)

Meth Lab Recognition

Time Requirement: 30 minutes

Number of Facilitators: 1 or more, consistent with ratio in Minimum Criteria

Objectives

When they complete this section, participants will be better able to:

- Identify the hazards that meth labs pose
- Recognize a meth lab
- Respond if they suspect a meth lab in their community

Materials

- Participant Guide
- Whiteboard or equivalent; markers

Teaching Methods

Presentation/Discussion

Suggested Facilitator Preparation

- Review the Participant Guide
- Prepare lists of potential locations for Meth Labs
- Identify reporting procedures in the community

Minimum Content Requirement

- What is Methamphetamine
- Meth ingredients/supplies
- Common locations for Meth Labs
- Potential hazards from Meth Labs
- How to recognize potential Meth Labs

Suggested Presentation of the Exercise

This following is a suggested format for this discussion:

- Review what is Methamphetamine:
- Briefly cover what Meth is; refer class to the “Faces of Meth” in the Participant section.
- Discuss what is used to make Meth:
- Ask the class to review the list of materials found in the Participant Guide.
- Identify common locations for Meth Labs:
- Ask if there is a risk of these labs in the community.
- List any locations where all can see.
- Discuss typical locations for Meth Labs.

Exercise – Meth Lab Recognition - Facilitator Guide

- Cover potential hazards from Meth Labs:
- Ask what potential hazards could result from Meth Labs.
- Discuss, being sure to cover those noted in the Participant Guide.
- Discuss how to recognize potential Meth Labs:
- Ask how might you recognize a Meth Lab in your community.
- Review the list of warning signs found in the Participant section.

Questions you may be asked

“Why are we only discussing Meth? Does the manufacturing of other drugs also produce hazardous materials?” While other drug usage can result in hazards such as used needles, Meth is unique because of the variety of hazardous materials generated and the rapid increase in the amount of these hazardous materials.

Meth Lab Recognition

Objectives

When you complete this section, you will be better able to:

- Identify the hazards that meth labs pose
- Recognize a potential meth lab
- Report if you suspect a meth lab in your community

What Is Methamphetamine?

Methamphetamine (meth) is a stimulant that attacks the central nervous system. Users stay awake and energized for days, followed by a serious crash lasting an equal amount

Exercise – Meth Lab Recognition - Participant Guide

of time. Some compare meth highs to cocaine highs, saying they feel just as intense, but longer-lasting, less expensive, and much easier to come by.

Meth addicts often have severe scarring on their face, arms, and legs because they “feel” imaginary bugs crawling all over their skin, and scratch to get them off.

Emergency room staff members have reported seeing meth addicts with gouges down to the bone, swollen and infected. Meth “cooks,” as the manufacturers are called, sometimes enter the ER with burns covering over half their body from chemical spills, fires, or explosions. Users rarely shower or eat because they think these menial tasks are not important enough to waste their vast amounts of energy on.

These photos of a woman named Theresa came from a project called “Faces of Meth” in Oregon. Deputy Bret King compiled mug shots of inmates known to use meth. The before and after photos are only two and a half years apart.



Common Materials Used to Manufacture Meth

These materials - which can easily be found in grocery, hardware, and drug stores - are commonly used to manufacture meth:

- Acetone (fingernail polish remover)
- Aluminum (foil)
- Anhydrous ammonia (farm fertilizer)
- Benzene (dye, varnish, lacquer)
- Bronchodilators
- Camp stove fuel (white gasoline)
- Diet aids
- Energy boosters
- Ether (engine starter)
- Freon (refrigerant)
- Iodine (tincture or crystal)
- Isopropyl alcohol (rubbing alcohol)
- Lithium (camera batteries)
- Muriatic acid (swimming pool cleaner)
- Paint thinner
- Pseudoephedrine (cold pills)
- Red phosphorus (matches, flares)
- Sodium chloride (table salt)
- Sodium hydroxide (lye)
- Sulfuric acid (drain cleaner)
- Toluene (brake cleaner)
- Glass dishes (Pyrex)
- Jugs and bottles (especially 2-liter bottles)
- Tubing
- Paper towels & coffee filters
- Thermometer
- Cheesecloth
- Funnels, measuring cups
- Ice chests
- Plastic storage containers
- Hot plates
- Towels, bed sheets
- Laboratory beakers, glassware
- Propane tanks

Common Locations for Meth Labs

Re-examine the list of chemicals and equipment found in meth labs. Notice anything? Most, if not all, of the materials can be purchased from local drug, hardware, and even grocery stores. Because it's so easy to get the ingredients, labs are popping up everywhere. Manufacturing used to take place in "super labs" where pounds of the drug were turned out on a weekly basis. Now, "mom and pop" labs are a more common sight for law enforcement officers.

"Mom and pop" labs are typically run by one or two meth cooks in small, local areas. Meth is not a big-city drug anymore. Some cooks set up their labs in motel rooms, so they don't put their personal homes and property in danger of chemical contamination or explosion. Extended-stay motels are popular choices.

Other meth cooks have what is known as a "rolling meth lab." Some people take their campers or RVs out on the road while a batch is cooking. They leave the windows down to vent out the poisonous gases that come out of the manufacturing process. However roomy an RV might be, meth cooks do not require that much space. An entire lab can be made to fit into a large plastic container that goes easily into the trunk of an average-sized car or that sits in the back of a truck.

More recently, a method of cooking meth called "shake-and-bake" has become popular, especially after many states began to tightly control the quantities of pseudoephedrine that people could buy. In this method, only a small quantity of chemicals is needed because the drug is cooked in two 1- or 2-liter soft drink bottles. The popularity of the method has led to a huge increase in burn injuries when the method goes wrong. In some cases, cooks may conceal the bottles inside a backpack, which will be left in some public place, to avoid the risk to themselves if the bottles explode. This creates another risk for the general public.

Potential Hazards Associated with Meth Labs

Meth labs create many hazards, both directly on-site and off-site.

Chemical

The chemicals that go into meth production are dangerous enough on their own, but put together they create an extremely hazardous environment for those in and around the lab. People exposed to these chemicals for too long, or in too high a concentration can experience both immediate and long-lasting health effects.

Meth cooks don't always like to use the city garbage collection to get rid of their waste products, since they could easily get caught this way. Instead, they tend to dump their waste just about anywhere. Dumpsites tend to be near roadsides or inside a forested area. This puts roadside cleanup workers at risk of being contaminated by the toxic waste. For every ounce of meth produced, 4 or 5 ounces of toxic waste are dumped into the environment.

Physical

Fire

Fires and explosions are a major hazard for those around a meth lab. Many chemicals that go into meth production, like toluene, are highly flammable. Some of the chemical mixtures are so unstable that they can explode from something as simple as a door slam.

Needle Sticks

Meth users sometimes inject the drug, leaving used hypodermic needles around the lab, surrounding property, and in the trash. Unsuspecting garbage collectors or curious children could find themselves punctured by the dirty needle.

Broken Glass

Broken glass can be found in and around meth labs, which could hurt neighborhood children at play.

Biological

Blood-borne Pathogens

If someone is stuck by a dirty needle, that person is at risk of contracting a blood-borne disease like HIV or Hepatitis B.

Recognizing Meth Labs

One of the first steps to protecting yourself and your community from meth labs is learning to recognize them. How can you do that? Look for these warning signs:

- **Odor.** Meth labs often have a strong smell of ammonia, cat urine, or rotten eggs.
- **Unusual items in trash.** If you see a lot of empty cold pill packages, that's one of the best indicators. You could also see empty containers of toluene, acetone, ammonia, or drain cleaner.
- **Propane tanks with blue crust on the valve.** If you see this, DO NOT TOUCH the tank and leave immediately. A tank in this condition could explode easily.
- **Glassware.** Non-chemists moving around a lot of glass lab equipment is fairly suspicious activity.
- If local farms have been had **anhydrous ammonia thefts**, notify police that this could be related to meth labs, as ammonia is a main ingredient in meth.
- **Odd traffic at odd hours.** This may sound like your teenager, but coupled with other indicators of meth labs, this could be suspicious activity.
- **Car windows open in the winter.** If a vehicle is driving with the windows open in the winter, it could be because it is a rolling meth lab, and the driver is trying to vent the fumes to the environment.
- **Roadside trash.** Be careful about this one, since litter is a frequent occurrence. Be suspicious of meth waste if you notice an odor (see above) and see items

such as stained coffee filters, glass bottles, and rubber tubing in a picnic cooler. The Shake and Bake method results in 2-liter bottles as trash, sometimes with some meth in them. These hazards have no odor.

Your Responsibility as a Member of the Community

As a community member, there is a lot that you can do to help. If you suspect a meth lab is nearby, contact your local police and let them know about your suspicions. Do not approach a suspected meth lab. This could be dangerous to your health. Instead:

- Observe from a safe distance, upwind, if possible.
- Take careful notes about any suspicious activity you've noticed, but do not risk your safety; stay at a safe distance.
- Report what you see promptly to the police.

Providing the police with your observations, will help keep them safer when they approach the suspected lab, as well as your entire community.