



Environmental Releases –

Recognition, Health Effects, and Reporting

Hybrid Course Facilitator Guide

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Midwest Consortium for Hazardous Waste Worker Training

Acknowledgements

This curriculum has been developed by the Midwest Consortium for Hazardous Waste Worker Training under cooperative agreement number U45 ES06184 from the National Institute of Environmental Health Sciences. We encourage you to comment on these materials; you may give your suggestions to your Program Director.

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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

Note to Facilitators: The 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 potentially hazardous drums or containers. Emergency responders receive substantial training to protect themselves and others when approaching hazardous material or stopping releases.

Content was finalized on February 13, 2023 and all web links are active as of that date.

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Overview

This Facilitator Guide provides guidelines for presenting the material and includes:

- Guidance for delivering Part 1 of training (the asynchronous/online training component).
- Guidance for delivering Part 2 of training (the synchronous/real-time component)

Sample Agenda

Part 1 (Asynchronous, online). Over 3 weeks. Finished at least 72 hours prior to Live Training

Getting Started and Introduction to Hazard Recognition Modules	15 minutes
Hazard Recognition	90 minutes
Exercise: <i>Reporting What You See</i>	15 minutes

Part 2 (Synchronous, online or in person)

Welcome & Questions	20 minutes
Health Effects	15 minutes
Resources	15 minutes
Exercise	60 minutes
Closing	10 minutes

Successful Course Completion

Participants will have successfully completed the training if they have:

1. Satisfactorily submitted the Reporting What You See Exercise via Google Forms
2. Attended the live 2-hour training

Part 1 Overview

Time Requirement: 2 hours

Number of Facilitators: 1

Objectives

Upon completion of Part 1 of the program, participants will be better able to:

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

Materials

- Registration Materials
- Online content
- Reliable computer and internet access

Teaching Methods

- Asynchronous, online instruction
- Email correspondence
- Reviewing students' submissions via Google Forms

Facilitator Preparation

Participants are asked to complete Part 1 of the training asynchronously and independently in an online learning platform called Canvas. The learning materials in the Canvas site have been adapted and updated based on the 4-hour live training by a team at the University of Minnesota (U of MN). ***Facilitators are not responsible for creating or updating materials in the online learning platform.***

Facilitators should:

- Review this Facilitator Guide
- Review online course site and learning materials

The Online Learning Materials and Platform

The online learning platform includes:

- An introductory video on Hazard Recognition
- Learning Modules covering all of the learning content on Hazard Recognition.
Each module includes:
 - 1-5 minute video presentations
 - Ungraded Knowledge Checks
- An embedded learning exercise (Reporting What You See) created in Google Forms that participants submit.
 - Submissions are collated into a Google Spreadsheet unique to the course offering.
- A “Getting Started” orientation module on how to complete the online portion of the training (Part 1)
- The “Part One Completion Guide,” a one page checklist of tasks and exercises to complete the online portion of the training.

- Contact information for the main U of MN Canvas learning platform technical support team for student technical issues with logins and Canvas issues, as well as the direct contact information for the small U of MN team who created the site.
- Email contact information for the facilitator.

Part 1 Materials Provided to Facilitators



The U of MN team will provide the facilitator with the following information to get started:

- A link with access to the Canvas learning platform site.
- Directions to provide to participants to access the Canvas site in a welcome email.
 - Each registered participant will be given a unique login generated by the U of MN IT team that must be used to log into the online learning platform.
- Access and the link to a Google Folder which houses the exercise embedded in the Canvas site.
 - Facilitators have access to review participants' responses to the exercise in the folder.
 - Each form automatically generates responses in a Google spreadsheet.

Part 1 Primary Facilitator Responsibilities

Facilitators are responsible for:

- Sending a separate welcome email (sample found below) to each participant which includes the following:
 - The participant's username and password for the Canvas Online Learning Platform.
 - The Online Learning Platform link with brief directions on how to get started.
 - Preferred contact information for questions.
 - A due date for course online exercise.

- Information about the live course meeting.
- Responding within 48 hours of receiving learner questions by:
 - Responding individually by email when appropriate;
 - Emailing all participants with the question and answer when urgent; or
 - Adding questions and responses to the FAQ Google Doc, found in the Google Folder shared with you and embedded in site, so all learners can benefit from the questions and answers immediately and into the future.
- Reviewing and assessing all participants' exercise to ensure completion and understanding:
 - To view participants' responses, go to the Google Folder of Training Exercises shared with you.
 - Each Exercise has two corresponding files:
 -  A Google Form, e.g "Exercise Reporting what you see" and
 -  A Google Sheet, e.g "Exercise Reporting what you see"

Participants' responses for the exercise can be found in the Google Sheet files found in this folder; their answers are automatically generated when they fill out the Google Form Exercise docs.

Sample welcome email

Welcome to the course *Environmental Releases - Recognition, Health Effects, and Reporting*, provided by NAME OF TRAINING CENTER. This course is delivered in two parts: Part One is online and will take you about two hours to complete. Part Two is a live, 2-hour training that will take place on DATE/TIME at LOCATION.

The purpose of this email is to provide you with the information you need to get started with Part One of the course.

You will complete Part One asynchronously and independently in an online learning platform called Canvas hosted by the University of Minnesota. To get started in Canvas, click on the following link. You will be guided through a series of online presentations and an exercise that is submitted directly online. LINK

Your Canvas user name is USER NAME and your password is PASSWORD.

Please have PART One completed by DATE/TIME.

If you have any questions, please contact NAME/CONTACT INFO.

Hazard Recognition

Participant Time Requirement: 90 minutes

Delivery Method: Asynchronous, Online

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

- Online content
- Internet Access
- Link to the Online Learning Platform
- ERG (downloaded PDF version, physical copies, or App)

Teaching Methods

Addressing questions about:

- Online Presentations
- Online Knowledge Checks
- Exercise Submission via Google Forms (Reporting What You See)

Facilitator Preparation

- Review the online learning modules:
 - Physical, Biological, Chemical Hazards
 - Placards and Labels
 - Hazard Communication Standard
 - Alternative Signage
 - Containers
- Prepare lists of potential physical, biological, and chemical hazards in your community to use as examples

Exercise - Reporting What You See

Time Requirement for Participants: 15 minutes

Delivery Method: Google Form embedded in Online Learning Platform

Location of Google Form Spreadsheet of Responses: Google Folder (Link provided with delivery instructions)

Objectives

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

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

Materials

- Online Content
- Internet Access
- Link to the Online Learning Platform

Teaching Methods

- Individual activity

Facilitator Preparation

- Review “What’s Going on Here” exercise

Questions You May Be Asked

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.

Should I make a report while I am observing, or should I leave and report later?

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.

Who should I contact to report hazards I observe?

Help the participant identify the most appropriate local organization to contact if they observe various potential hazards.

Part 2 Introduction

Time Requirement: 2 hours

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

Objectives

Upon completion of Part 2 of the program, 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
- Describe the responsibilities of some federal, state, and local agencies
- Describe relevant legislation
- List online resources

Materials

- Sign-in sheet
- Part 2 PowerPoint (available at <https://mwc.umn.edu/catalog/>)
- Reliable computer(s) and internet access

Facilitator Preparation

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/>.

The facilitator should also:

- Carefully review this Facilitator Guide and the PowerPoint
- Ensure operation of audiovisual equipment prior to the session
- Test all web links prior to the session
- Be familiar with the OSHA's HAZWOPER Standard, 29 CFR 1910.120
- Be familiar with [NIEHS Minimum Health and Safety Training Criteria](#)
- Research and prepare local examples of potential hazardous material releases, based on participants' responses to assignments and questions
- Print and make copies of the PowerPoint (3-slide Handout option) so participants can take notes and have content for future reference

Presentation of Part 2

Facilitators meet live (synchronously) with participants for Part 2 - either online or in a physical space. During the live part of the training, facilitators are responsible for:

- Initial welcome and introductions
- Addressing any follow up questions from the online content
- Presenting the “Health Effects” content
- Presenting the “Resources” content
- Identifying and facilitating an exercise
- Completing course evaluation

Health Effects

Time Requirement: 15 minutes

Number of Facilitators: 1 or more, consistent with ratio found 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

- Part 2 PowerPoint
- Whiteboard or equivalent; markers
- Computer w/ internet access

Teaching Methods

- Synchronous instruction, in person or online
- Presentation
- Discussion

Facilitator Preparation

- Review the PowerPoint
- 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 the effects of chemicals 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?
 - What happens if you are exposed?
 - 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 PowerPoint.

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.
- Reinforce key points

Resources

Time Requirement: 15 minutes

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

Objectives

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

- Describe the responsibilities of some of the federal, state, and local agencies
- Describe relevant legislation
- Identify online resources

Materials

- Part 2 PowerPoint
- Computer w/ internet access
- Whiteboard or equivalent; markers

Teaching Methods

- Synchronous instruction, in person or online
- Presentation
- Discussion

Suggested Facilitator Preparation

- Review the PowerPoint
- 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 the health department or the County Sheriff are best avenues to report a potential hazardous material release.

Presentation of the Session

- Introduce the agencies and their roles. Provide an example of how they could be used for information.
- Based on participants, highlight any particularly relevant legislation. Provide an example of how it could be used for information.
- Provide an example of how the internet can be used to gather information. Have participants access several websites.

Exercise

Select an exercise or exercises from the Facilitator Guide Appendix to utilize here. The following are available, 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

Closing

Time Requirement: 10 minutes

Number of Facilitators: 1

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

- Answer any remaining questions.
- Explain the purpose of the course evaluation form:
 - To get feedback from participants about the course and facilitator(s).
 - To help facilitators understand their strengths and weaknesses and 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

This Appendix includes the Participant Guide and Facilitator Guide for three exercises for use in REL. In addition to those listed below, 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

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.

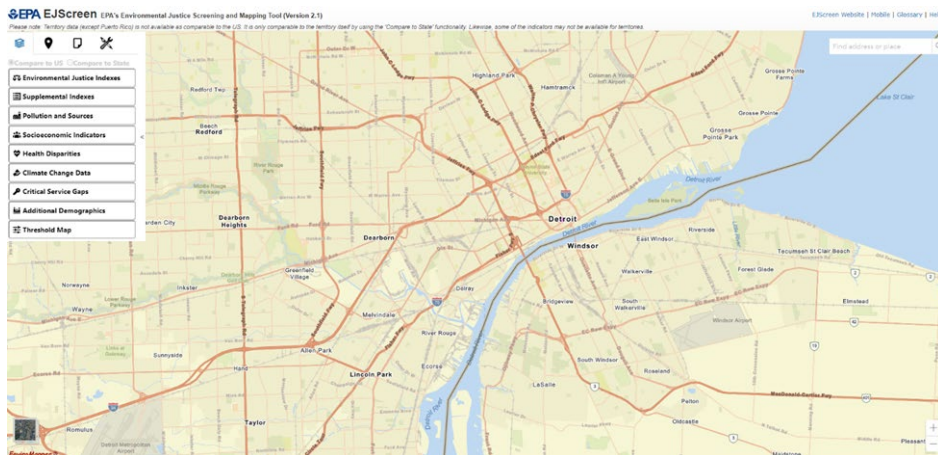
Reports

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

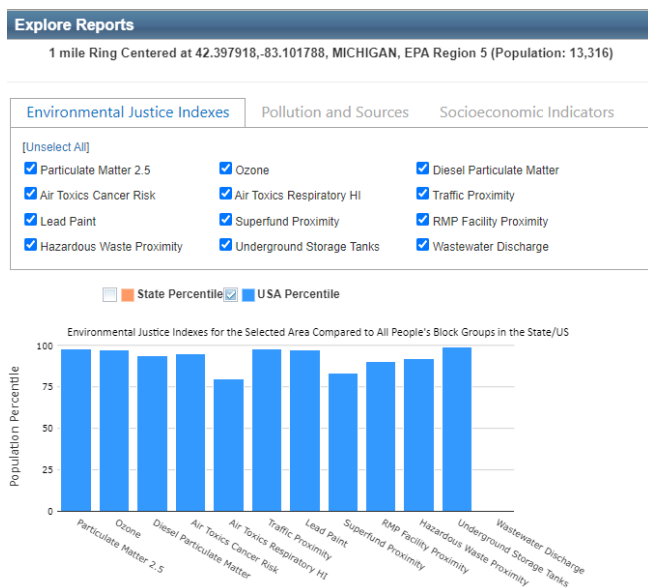
Exercise – Using EJSCREEN - Participant Guide

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 _____



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.



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.
- 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 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.

Exercise – Meth Lab Recognition - Participant Guide

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.